Response to Comments Document
For the
2002 Integrated List of Waterbodies and 2002 Integrated Water Quality Monitoring and Assessment Methods Document
Public Comment Period

This Response to Comment document was prepared pursuant to Sections 303(d) of the Federal Clean Water Act

State of New Jersey
Department of Environmental Protection
Land Use Management
Bureau of Water Quality Standards and Assessment
December 20, 2002

Response To Comments

2002 Integrated List of Waterbodies and 2002 Integrated Water Quality Monitoring and Assessment Methods Document

Comments received from:

1. Wallkill River Watershed (WMA 02) Management Project's Technical Advisory Committee (TAC). Nathaniel Sajdak, Watershed Coordinator and Ernest Hofer, P.E. Watershed Specialist.
2. Sussex County Municipal Utilities Authority. John Hatzelis, Administrator and Thomas J. Varro, P.E. Chief Engineer.
3. New Jersey Water Supply Authority, Daniel J. Van Abs, Manager Watershed Protection Programs
4. Noelle Reeve, Regional Planning Partnership Contractor for WMA 11
5. TRC Omni Environmental Corporation, James F. Cosgrove, Jr., P.E.
6. ANJEC, Abigail Fair
7. Monmouth County Health Department, Bill Simmons
8. Pequannock River Coalition, Ross Kushner, Executive Director
9. Monmouth Coastal Watershed Partnership for the WMA12, K. Thomas Kellers (Chairman)
10. Watershed Management Area 16 Technical Advisory Committee (TAC), George Marinakis, (Chairman)
11. PSEG Services Corporation, Russell J. Furnari, Environmental Manager-Water
12. Passaic River Coalition. Ella Filippone, Executive Administrator
13. Lee T. Purcell Associates. Lee T. Purcell, Principal
14. Stony Brook Watershed Association. Steve Yergeau, Watershed Assessment Specialist.
15. Pinelands Commission. Annette Barbaccia, Executive Director
16. Skylands Clean, Inc. Kathy Baker Skafidas, Director
17. Pinelands Preservation Alliance. Richard G. Bizub
18. Wanaque Valley Regional Sewerage Authority. Gregory White, Facilities Manager
19. USEPA Region II. Mario Del Vicario, Chief Division of Environmental Planning and Protection

May 20, 2002 Public Notice

Note: The Department received many comments regarding the use of the term "category" to describe the sections within the Integrated List. Although the term "category" is used by USEPA in their guidance, it has generated much confusion in New Jersey as this term is also used in our Surface Water Quality Standards' Antidegradation Policy. As referenced in response to comments 7 – 10 below, the Department has replaced "category" with "sublist" in the final version of the Methods Document and Integrated List. The Department will use the term "sublist" in its response document.

General Comments

Comment 1: The Watershed Management Area (WMA) 02 TAC would like to commend the Department for its recent efforts to characterize and assess the water quality of New Jersey's surface waters. Particularly of note and appreciation is the continuing task of obtaining and analyzing current water quality data to more accurately assess and reflect present conditions. (1, 2)

Comment 2: The documents made available on May 20th mark an important first step in the process. In particular: The requirement that data must be collected using a Quality Assurance Project Plan (QAPP) ; the determination that "estimated" waters are placed in Categories 2 or 3 not Sublist 5; that only data collected when stream flows are above design flow are used for assessment; the determination that waters impaired by natural causes are not to be placed in Sublist 5; that data on "total metals" concentrations above dissolved criteria will be targeted for more sampling rather than being placed in Sublist 5; that no exceedence is counted if both the criterion and the metal concentration are below the MDL; and that previously listed waters can be "delisted" (moved from Sublist 5 to another Sublist) if revisions to standards may cause them to come into compliance, and if the previous listing was based on data that are insufficient to meet the current data quality requirements. (11)

Comment 3: The Department's decision to utilize an Integrated Report to address both the 305(b) and 303(d) reporting requirements is supported. We believe that consolidating the Water Quality Inventory Report and the 303(d) List of Impaired Water Bodies will assist both the general public and watershed management areas such as ours. (10)

Response to Comments 1 through 3: The Department acknowledges the support for the proposal as expressed by these comments.

Comment 4: The new proposed methodology, which assigns water bodies to one of five categories (where Sublist 5 represents integration of the former 303(d) listing of impaired waterbodies) is a good idea. However, the benefits from this change may be offset by confusion regarding the basis and significance of the individual listing designations. What was once a listing of impaired waterbodies in the form of a 303(d) list and a 305(b) report is now being changed to a more complex and detail oriented approach. The concern is that this new proposed methodology will not accurately reflect the surface water quality throughout the State in a format, which provides "user-friendly" information. Indeed, the proposed Integrated List will provide only a pass/fail report card without indicating positive or negative water quality trends. (1, 2)

Response to Comment 4: The 303(d) List has historically shown waterbodies which do not meet Surface Water Quality Standards (SWQS). The 305(b) Report was the venue for discussing water quality trends and noting improvements. The Integrated Report, which includes the 305(b) components, will discuss improvements and trends as appropriate. When the final Integrated List is approved by USEPA, the Department intends to provide additional tables on the web by which one can look up a specific waterbody and ascertain the status of all parameters.

Comment 5: A waterbody may remain in Sublist 5 for a single parameter, having reached attainment status for several other parameters, making it extremely difficult to show that the

other impairments in that waterbody were indeed successfully addressed. The general concern is that the Department is putting itself in a position where the public perception will be that, despite all the resources utilized, no improvement is demonstrated. Therefore the culprit must be mismanagement. In addition, it appears that using this approach may make it impossible to show any real progress. (1,2)

Comment 6: Breaking up, providing more specific designation, or creating sub-groupings within Sublist 5 for the impaired surface waterbodies would possibly provide the opportunity to quantify successful corrective action. For example, label a Sublist 5 waterbody as say Sublist 5A if impaired for fecal coliform, 5B if impaired for a chemical parameter, 5C if impaired for macroinvertebrates and so forth. Therefore if a body of water is originally designated as Sublist 5A, 5B, and 5C, but corrective action is taken to deal with the 5B and 5C impairments, the water body can be delisted as such, and then only appear as a Sublist 5A impaired surface water. Another option is to create a new Sublist for those waterbodies such as the Wallkill River which have demonstrated water quality improvements, but have not yet resolved all identified impairment(s). (1,2)

Response to Comments 5 and 6: The Department considered adding subcategories to the list but determined that it could be more confusing. Instead, the Department determined to list each waterbody/parameter combination. Although this will result in a waterbody being listed several times (once for each parameter), it will allow tracking of individual parameters not just the worst case parameter. The Department also identified parameters not meeting Surface Water Quality Standards on the 1998 List of Impaired Waterbodies but which are now meeting Surface Water Quality Standards. This information is available as the "Comparison Document - Locations On The 2002 Integrated List Of All Waterbodies Listed In New Jersey's 1998 List Of Water Quality Limited Waters (Section 303(d))" on the Department's website at http://www.state.nj.us/dep/dsr/watershed/integratedlist.

Comment 7: It is suggested that the 1-5 Category labeling be changed to eliminate the reference to "Category". A possible solution to this may be to utilize the term "Integrated List" in conjunction with roman numerals (i.e. Integrated List III) so as to differentiate the Integrated List designation from the anti-degradation classification. (1,2)

Comment 8: Combining the 303(d) List and the 305(b) Report is a very wise decision that results in a more integrated and easier to comprehend format. The Department should modify the term "category" to "List" so that there is no confusion with the categories set forth in N.J.A.C. 7:9B-1.4. (5)

Comment 9: The use of the word "category" is very confusing, suggesting a connection with the antidegradation categories. The Department should use the word "class" or "Group" in regard to the 5 assessments to avoid confusion. (6)

Comment 10: Is the new Category 1 water the same as the old Category 1 water in terms of anti-degradation policies? What kind of anti-degradation policies apply to the other categories of streams 2-5? Is the anti-degradation tied into the TMDL process now? (4)

Response to Comments 7 through 10: The Department is aware of the confusion generated by the use of the term "category" used for the purpose of implementing the antidegradation policies to describe the 5 sections of the integrated list. Although USEPA uses the term "category", the Department has decided to use the term "sublist" to eliminate confusion with the term "category" in the SWQSs. The term "sublist" will be used in the final version of the Methods Document and the Integrated List

Comment 11: With reference to the 1998 303(d) List, the Department proposed a set of preliminary TMDL parameter recommendations for WMA 02 (letter dated October 6, 1999 by Karen Schaffer). It appears these recommendations were adopted and made part of the basis for classifying WMA 02 sites covered in the draft 2002 Integrated Document. Is this correct? (1,2)

Response to Comment 11: The 1999 preliminary recommendations began with a review of the 1998 Impaired Waterbodies List (303d List), which was then updated with Ambient Stream Monitoring Network status data for pH, total phosphorus, dissolved oxygen, and fecal coliform from 1992 through 1998 and trends analyses for flow, total phosphorus, dissolved oxygen, fecal coliform, and nitrate-nitrogen. In developing the draft 2002 Integrated List, the Department further updated the 1999 preliminary assessment using data collected through 2002.

Comment 12: The proposed 2002 Integrated Document (Lists/Categories) proposes a number of continuing monitoring programs to confirm suspected impairments for arsenic (several sites), total phosphorus at the Wallkill River in Franklin, surface water temperature at the Wallkill River in Franklin and BMPs for addressing temperature impairment at Sparta. Please advise on future plans and timing. (1,2)

Response to Comment 12: In April 2002, a draft technical approaches document was developed for the Wallkill River and WMA 2 outlining the impairments in these waterbodies and the proposed actions to be taken by the Department. The document, titled "Assessment And Approaches To Restore Impaired Waterbodies Within The Wallkill River Watershed WMA-02: Wallkill River, Pochuck and Papakating Creeks Sussex County, New Jersey", is available from the Northwest Bureau, Watershed Management, Land Use Management, PO Box 418, Trenton, NJ 08625. This document outlines the proposed actions to be taken by the Department. The proposed actions will be developed according to the Amended 2002 TMDL Schedule of TMDL Development located at: http://www.state.nj.us/dep/dsr/watershed/integratedlist/.

Comment 13: Please advise on plans and timing for communicating the state-wide approach (methodology, mathematical equations) for assessing the alleged fecal coliform impairments at various locations on all WMA 02 major waterbodies. (1,2)

Response to Comment 13: Pursuant to the September 16, 2002 Memorandum of Agreement (MOA) between the Department and USEPA Region 2, the Department has agreed to establish 20 fecal coliform TMDLs by March 31, 2003 and 100 additional fecal coliform TMDLs by June 30, 2003. It is anticipated that the first 20 fecal coliform TMDLs will be located in the northeast section of the State, with the remaining areas addressed by the June 30, 2003 deadline. The Department will use the same methodology for all expedited fecal coliform TMDLs. In order to meet the MOA schedule, the Department anticipates issuing a public notice of the first 20 fecal

coliform TMDLs in early 2003. It is not anticipated that any waterbodies within WMA 02 will be included in the initial 20 TMDLs. The Department anticipates discussing the state-wide fecal coliform TMDL methodology at upcoming Technical Advisory Committee (TAC) meetings.

Comment 14: When will the data used to make listing decisions be available to the public? (3)

Response to Comment 14: The data is available from the entities generating the data. These data sources were identified in the draft 2002 Integrated Water Quality Monitoring and Assessment Guidance Document in Appendix II "Data Sources for the 2002 New Jersey Integrated Report" along with mailing and/or e-mail addresses. The Department has also downloaded the raw data to a CD which is available to the public upon request (609-292-9692 or WAT@dep.state.nj.us).

Comment 15: A GIS coverage of the listings should also be available to the public. (3,9)

Response to Comment 15: GIS coverage of the sublists (categories) will be included in the final Integrated Assessment and Methodology Report and available on the web page.

Comment 16: Although minimum flow rates are not specifically protected by the New Jersey Surface Water Quality Standards, lack of flow has, in fact, been confirmed as a "pollutant" under the Clean Water Act. See the 1994 Supreme Court decision in "PUD NO. 1 OF JEFFERSON COUNTY et al. *v.* WASHINGTON DEPARTMENT OF ECOLOGY et al." (8)

Response to Comment 16: The Department is aware of the case cited by the commenter. In that case the court upheld the minimum stream flow requirement included in the water quality certification under Section 401 of the CWA. The Department has identified impairments on Sublist 5 which may be caused in part by low flows aggravated by anthropogenic conditions.

Comment 17: In reviewing the 303(d) List of waterbodies within WMA 16 that have previously been identified by the Department as "impaired," the members of the TAC have been concerned about these designations since each of these waterbodies is located within a remote and/or relatively undeveloped area and, therefore, all areas represent unlikely areas of contamination originating from human sources. This concern has led to the TAC's working with the Cape May County Health Department (CMCHD) in an effort to collect water quality samples at each of the sites included on the 1998 303(d) List in order to determine if there is a basis to request the Department's reconsideration of this listing. A summary of the results of this water quality sampling effort is enclosed for your review and consideration. (10)

Response to Comment 17: The water quality data supplied by the commenter reflects waterbodies with little if any anthropogenic loadings. The Department agrees that there are AMNET locations which, when assessed using the metrics contained in its protocol, reflect "impaired conditions" when, in fact, these results could be the result of natural conditions and simply reflects unique biotic communities which should be assessed using alternative methods. In addition, there are occasions when local activities such as road maintenance or construction have caused local (although sometimes temporary) impairment to what would otherwise be a non-impaired site based on the current metrics. Efforts have been made by the Department to

better assess AMNET locations which might reflect unique ecological conditions. The Department has placed some sites assessed as moderately impaired, such as those in headwaters, those immediately below impoundments (moderately impaired) and those located within the Pinelands region of the State (all assessment categories) on Sublist 3. In the near future, these locations will be subjected to alternative assessment procedures. The Department also plans to continue efforts to better define natural ecological conditions particularly in the Pinelands. Currently, the Department uses a conservative approach and lists the waterbodies (including the waterbodies/locations identified by the commenter) on Sublist 5 and will investigate the sites prior to developing a TMDL to determine if the locations reflect unique natural conditions.

Comment 18: The Department should use caution before utilizing old and new data that has not been thoroughly reviewed in regard to its quality. (11)

Response to Comment 18: The Department realizes the importance of using only high quality data and has outlined strict Quality assurance/Quality control (QA/QC) requirements in the Methods Document. Data used by the Department in developing the 2002 Integrated List adhered to the QA/QC requirements.

Comment 19: The Methodology appears to have been prematurely published for review in that there are numerous locations in the document where it states TBD (i.e., to be determined, Table A1) or placeholder (e.g., Appendix II and III). Since these sections are incomplete, the Commenter reserves its future right to comment on them. The Department should conduct a thorough internal review following the receipt of comments and then re-publish it for public comment. (11)

Response to Comment 19: The Methods Document will be revised, as necessary, and public noticed prior to each listing cycle. Some placeholders or TBD identify areas which the Department feels would improve the methods document but realizes that more work needs to be done on these issues prior to including them in the document and utilizing them. The Department will provide public notice and an opportunity to comment on any significant revisions to the Methods Document.

Comment 20: The Department should include a background section in the document to facilitate stakeholder understanding. For example, a discussion of water management areas and a figure to depict them would be helpful. (11)

Response to Comment 20: A discussion of watershed management areas and a figure to depict them has been provided in previous 305 (b) Reports. The 2000 305(b) Report is available from the Department. The 2002 Integrated Report is an update to the 2000 305(b) and includes things that have changed since the 2000 305(b) report. As such, the discussion of the water management areas will not be repeated in the 2002 Integrated Report but the Department will include a map of the management areas to aid in reviewing the various sublists.

Comment 21: The tables interspersed throughout the text should be appropriately referenced in the narrative discussion. (11)

Response to Comment 21: The Department agrees that further cross references to the tables may help improve the Methods Document and has provided additional table references in the final version.

Comment 22: How will the people of the State of New Jersey be empowered to use the information provided in the 2002 Integrated Water Quality Monitoring and Assessment Report to further improve the quality of the water resources of this State? (12)

Response to Comment 22: The Department believes that the new Integrated List format is user-friendly and helps to focus local issues that need to be addressed through the watershed or TMDL effort. It also provides new ways for local groups and the general public to work with the Department to restore water quality. The Department has solicited data from local groups to assist in the assessment of water quality. Local groups can assist the Department by initiating water quality monitoring for waterbodies with insufficient data to assess status, conducting supplemental monitoring, initiating local restoration efforts such as stream bank stabilization, and educating the public on the impacts on non-point source pollution, and identifying waterbodies that qualify for such projects.

Comment 23: The Department needs to develop a streamlined method for approving data from monitoring programs that meet Quality Assurance Project Plan (QAPP) objectives but do not currently have an established and approved QAPP. The Department needs to encourage organizations currently performing monitoring to become "certified" as a data provider for the 303d or integrated list; the Department should not just request the data, but actively pursue data. (3)

Response to Comment 23: The Department requested data through a public notice dated May 21, 2001 in the New Jersey Register (cite 33 NJR 1794), its web page and at various Watershed TAC and PAC meetings. The Department recognized that some water quality data collected to date may not have been collected under a QA/QC project plan "approved" by the Department. The Department provided notice that it would consider data, for this data solicitation only, which did not have a previously approved QA/QC project plan if the data was collected in accordance with a QA/QC program acceptable to the Department for the 2002 Integrated List only. The Department maintains a policy that an approved Quality Assurance Project Plan (QAPP) accompany all environmental data collection activities performed by, or for use by, the Department as outlined in the Department and USEPA Region 2's approved FY01-FY02 Departmental Quality Management Plan. The Department accepted data from monitoring programs that met QAPP objectives but did not currently have an established and approved QAPP. Consistent with Department policy, the public notice, did state that any future monitoring must be carried out under an approved QA/QC workplan in order to be considered for future Integrated Lists. Stakeholder groups are being encouraged to pursue certification and some have as a result of the data solicitation.

Comment 24: It seems that a water body is "categorized" for a particular use (i.e. recreational, drinking, etc.) individually and no other uses are looked at simultaneously. The water quality methods presented for the site assess the health of an entire waterway based upon one use at a time. There can be potential problems when it comes time to implement restoration efforts because this methodology does not review all uses to determine the overall state of the waterway. The report of categorized waters also looks at one use at a time, rather than listing all impaired

uses. If multiple uses are viewed together when performing the assessment, then this needs to be clarified. (14)

Response to Comment 24: The purpose of the Integrated List is to evaluate the water quality data available for each waterbody and assess whether the water quality is adequate to support each designated use. Each waterbody is assessed for each and every designated use assigned to that waterbody provided there is sufficient data to assess the designated use. The results of the individual designated use assessments are reviewed and the waterbody placed in the appropriate Sublist for each designated use. A waterbody may be listed on more than one sublist. Those waterbodies placed in Sublist 1 have been assessed and have water quality which supports all designated uses. Those in Sublist 5 have one or more exceedences of water quality criteria resulting in non-attainment of one or more designated uses. See Section 7 of the Methods Document for more information.

Section 2
Comment 25: Sections 2.4 and 7.3.1, Use Attainability Analyses, are not indicated as a means for de-listing impaired segments on the Category 5 List. (3)

Response to Comment 25: Use Attainability Analyses are conducted under the Surface Water Quality Standards (SWQS) program and any changes resulting from the analyses would be reflected as a change in the designated uses. While Use Attainability Analyses are not directly identified as a means for de-listing, their use for this purpose is covered by the identification of a change in the SWQS as a basis for de-listing.

Section 3
Comment 26: On Page 8, Section 3.3, Locational Data, it is indicated that "EPA (Environmental Protection Agency) has encouraged states to increase the number and percent of waters assessed." Is New Jersey one of the states that the EPA has encouraged to do this? If so, what is New Jersey's timeframe for increasing the number and percentage of assessed waters? (14)

Response to Comment 26: EPA has encouraged all states to increase the spatial extent of their water quality assessment. New Jersey's plan for achieving comprehensive assessments has been delineated in New Jersey's 2000 305(b) Report in Part III, Chapter 2. The use of a probabilistic sampling method (a series of sampling and assessment techniques which support comprehensive assessments) is discussed in section 4.1.3 and Appendix II of the Methods Document. New Jersey is currently implementing the data collection for comprehensive assessments in most waterbody types (except lakes). For lakes a time-table has not yet been developed.

The assessment of the aquatic life use in lakes is currently the one area where New Jersey does not have comprehensive coverage. The Department, in cooperation with EPA Region II, is exploring alternative methods of lake bioassessments which will significantly improve our lake assessments. Progress towards this goal will be reported in the 2004 Integrated List.

Rivers and Streams: Implementation of the Redesigned Ambient Stream Monitoring Network began in October 1997. A portion of the budget for the program is devoted to randomly sampling a subset of the 820-station AMNET network each year towards the support of a

probabilistic monitoring effort, a monitoring scheme favored by EPA. An assessment by the United States Geological Survey (USGS) indicates that benthic macroinvertebrate monitoring in the 820-station AMNET program is representative of New Jersey streams. Thus, Department is now comprehensively assessing the biological uses in fresh water streams. In addition, the Department has improved its spatial assessment methodology (see section 6.0 in the Methods Document) and has expanded the number of river miles assessed between 2000 and 2002 using chemical monitoring. For example, prior to the 2002 305(b) Report, the Department could apply chemical assessments to less than 400 non-tidal stream miles, while over 2,000 miles were assessed in 2002.

Lakes: The Department does not comprehensively assess lakes, although it has increased the number of lakes assessed from previous reporting efforts. The Department has increased the number of lake acres assessed between 2000 and 2002. For example, the 2000 305(b) Report assesses 9,875 lake acres for Aquatic Life Support; in 2002 11,861 acres were assessed. However, current data sets do not provide a comprehensive assessment of use support status in lakes. New Jersey is looking at ways that lakes can be more thoroughly assessed in the future.

Estuaries and Oceans: New Jersey coastal waterbodies have been comprehensively assessed through the Marine and Estuarine Water Quality Monitoring, National Shellfish Sanitation Program, Cooperative Coastal Monitoring Program and USEPA's Helicopter Program.

Toxics in Fish Tissue: A 5 year rotating basin approach is being utilized for data collection and assessment to evaluate waters and update advisories. The five year effort is currently funded through the first year; funding for year 2 is under discussion.

Comment 27: Under Section 3.4 of the Methods Document, the Department should provide a template for the STORET formatting of third-party data. (3)

Response to Comment 27: Prior to the next data solicitation, the Department will provide a spreadsheet which can be used as a template for STORET formatting of third party data.

Comment 28: The Department should provide the rationale for the number of samples required for each parameter presented or have a section that explains the methodology employed. (11)

Comment 29: Page 11, Section 4.1.1, the Department states that the "minimum" data requirements for conventional parameters are "10 samples collected quarterly over two years" for different hydrologic units that are highly variable in size. The Department should explain how they derived these minimum requirements.(11)

Response to Comment 28 and 29: USEPA's "Guidelines for the Preparation of Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates" (EPA-841-B-97-002B, September 1997) recommends a minimum of 10 samples collected on a quarterly basis. Less than 10 samples may be used if the Department determines the smaller sampling is appropriate based upon other factors such as the magnitude or frequency of violations. For example, if the violations occur only in the summer months, the Department might accept summer only data that demonstrates compliance with the water quality criteria. There is usually

5 years worth of data for most stations. However, the Department will use 2 years of data as long as the 2-year period is representative of the stream condition.

Section 4

Comment 30: Tables 4.2, 4.3, 5.5, 5.7, 5.14, 5.15 and 5.16: Threatened Waters Row(s): The use of the word, "declining," may imply "decreasing concentrations" to some individuals, rather than "degrading water quality," as intended. Removal of the word, "declining," does not change the meaning of the sentence(s). (3)

Response to Comment 30: The Department has replaced the word "declining" with "degrading" for clarification.

Comment 31: Page 10, The antidegradation policy alone is not sufficient to list waters as impaired, the Department needs to explain what criteria will be applied to support this determination. The commenter reserves the right to comment further when NJDEP provides this information. (11)

Response to Comment 31: The Department did not use the antidegradation policy to list waterbodies. In order to assess antidegradation, baseline and trend data are both needed. The Department is collecting data to establish baseline water quality throughout the State which will enable the Department to assess trends in the future. The Department anticipates developing an assessment method for assessing antidegradation in the future. As with the current version of the Methods Document, the Department will provide the public with an opportunity to comment on any changes to the assessment methods prior to development of the next Integrated List.

Comment 32: Page 10, **Frequency of Exceedence**, states the acceptable frequency of exceedence of applicable SWQS for conventional water quality parameters is 10%. Is that percentage exceedence based on an entire data set collected over many years or on annual basis? (11)

Response to Comment 32: The 10% frequency of exceedence refers to the entire data set.

Comment 33: The Department should not use once in three years testing for toxics. This approach is inconsistent with the basis for standards for aquatic chronic effects and for human health. (11)

Response to Comment 33: The USEPA Water Quality Standards Handbook, 2nd Edition indicates that the appropriate frequency to determine an exceedance for aquatic life criteria, acute and chronic, is once in three years. The "once in 3 years" is consistent with USEPA's guidance as outlined in USEPA's "Guidelines for the Preparation of Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates" (EPA-841-B-97-002B, September, 1997). USEPA's Guidelines did not address individual human health criteria. The Department used the "once in 3 years" for all toxics. USEPA has recently drafted guidance for assessing human health criteria. This guidance, however, was not available in time to use for this Integrated List. The Department will be reviewing this and any other guidance which becomes

available prior to the next listing cycle and will incorporate new methodology into the Methods Document as appropriate.

Comment 34: Page 10, Magnitude of Exceedence, states that concentrations "slightly above" the criteria are considered exceedences of the criteria. This approach appears to be arbitrary and highly dependent upon the judgment/experience of the evaluator. The Department should consider the typical or representative precision deviations (Upper and Lower Confidence levels, see 40 CFR 136) for the parameter/criteria being evaluated and add/subtract, as appropriate, that factor into the measurements to allow for a more objective and consistent determination of whether or not an exceedence has occurred. The definition as written is unclear and does not provide a meaningful standard upon which the regulated community can be judged. (11)

Response to Comment 34: The Department does not take into account the magnitude of exceedence. Any exceedence over the criteria, however small, is an indication of impairment. To eliminate confusion, the Department has removed the phrase "(i.e., concentrations slightly above the criteria were considered exceedences of the criteria)".

Comment 35: Page 11, **Threatened Waters** are defined as waters that currently meet applicable water quality criteria but adverse water quality trends indicate that water quality will not be met in two years. The Department references a USEPA (2001) memorandum to support that definition. The commenter reviewed the memorandum, which is Appendix I to the Methodology, and could not find an explanation on how an "adverse water quality trend" is determined. Is the trend determined statistically? What level of significance is employed and what level of variation is deemed acceptable? This definition is arbitrary and capricious without such an explanation. The definition and classification should be removed if the Department and USEPA cannot provide a clearer and more scientifically defensible explanation. (11)

Response to Comment 35: The Department contracted with the US Geological Survey to evaluate water quality trends in New Jersey. The trends are determined using the nonparametric Seasonal Kendals test. These, results were peer reviewed and subsequently published as "Trends in Water Quality of New Jersey Streams, Water years 1986-95". Water Resources Investigations Report 98-4204. The Department has followed USEPA guidance and classified waterbodies as threatened where the current water quality meets standards but is not expected to meet these standards in the next two years. Consistent with USEPA guidance, threatened waterbodies are considered impaired and listed on Sublist 5.

Comment 36: Page 11, Table 4.1, The explanation of "Data Age" is unclear and suggests the following: Available data representative of present water quality and collected consistent with an approved QAPP. (11)

Response to Comment 36: The Department has added language to Table 4.1 for clarification regarding the age of the data. All data must be collected consistent with an approved QA/QC Plan as noted in Section 3 of the Methods Document.

Comment 37: The last sentence under Minimum Sampling Frequency should be clarified as follows: At least four samples are required quarterly. (11)

Response to Comment 37: Data should be collected four times during the year to assess seasonal differences and for a minimum of 2 years to account for transient phenomena. The Department has added language to Table 4.1 for clarification.

Comment 38: Page 12, Dissolved Oxygen (DO), If the criteria is a 24-hour average it is inappropriate for the Department to take one hourly value that is below the criteria and list the waterbody as exceeding the criteria. The "not less than at any time" should not be disassociated from the 24-hour criteria by the Department to make it more restrictive. Based on the Department's explanation, if one hourly value is below the criteria an exceedence would be listed. An individual hourly value is about 4% of the measurements that comprise the 24-hour criteria and this level of anomaly could occur without any actual exceedence of the criteria. A scientifically defensible approach to determining exceedences is to collect 24-hour average values of DO in the waterbody and then compare these values to the criteria. The second sentence should be modified as follows: "….will be compared to the not less than any time criteria." (11)

Response to Comment 38: "Not less than at any time" means that the criteria applies to every individual sample. The sentence "For evaluation of the "not less than at any time" criteria, the lowest DO value of the 24 hour period will be compared to the criteria". However, the Department agrees to the suggested modification and has added "not less than any time" a second time in the sentence so that it now reads "For evaluation of the "not less than at any time" criteria, the lowest DO value of the 24 hour period will be compared to the "not less than any time" criteria."

Comment 39: Page 12, Modified Water Quality Assessment. If there is an insufficient number of samples to perform the assessment, it is inappropriate to have a modified assessment method. A waterbody in this situation should be placed in Category 3-insufficient or no data and information is available to determine if the designated use is attained. If the method is retained, this description could be more clearly written to be consistent with Table 4.2 and the commenter offers the following: "Examples include: 1) datasets with 8 samples." (11)

Response to Comment 39: The Department believes that it is appropriate to allow for a modified assessment method. This allows the Department to consider data which has not been collected quarterly (i.e. temperature data collected during the summer months) or less than 2 years duration (i.e. diurnal DO data) which may clearly indicate an impairment or use attainment even though the minimum data requirements have not been met. This is consistent with USEPA's guidance ("Guidelines for the Preparation of Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates" (EPA-841-B-97-002B, September, 1997). The Department has retained the modified assessment method, but has added wording for clarification as suggested.

Comment 40: Page 13, Table 4.2, The Department should modify the last sentence as follows: "If two or more samples exceed applicable SWQS…" Greater than 10% of the samples using the stated approach would be greater than 0.8 samples which is not very practical. (11)

Response to Comment 40: The Department agrees with the comment and has corrected the text for clarification as suggested.

Comment 41: Page 13, Section 4.1.3, The commenter suggests that the Department explain more clearly the objective of this work (Probabilistic Sampling) how it is employed, and provide an Appendix that describes in detail the process employed in selecting stations from the 800 AMNET sites. (11)

Response to Comment 41: A detailed discussion of comprehensive assessments and the probabilistic sampling method employed by New Jersey to achieve a probabilistic monitoring network is located in Part III, Chapter 2 of the New Jersey 2000 Water Quality Inventory Report [305(b)]. This is available at www.state.nj.us/dep/dsr/watershed/305b/305b.htm. Information on the AMNET program is available at www.state.nj.us/dep/wmm/bfbm. The stations are selected at random via computer from a universe of over 800 benthic macroinvertebrate sites that represent a through spatial coverage within New Jersey. The probabilistic monitoring sites selection is stratified based on the 20 Watershed Management Areas (WMA). Two sites per WMA are selected every two years.

The objective of Probabilistic Sampling is to allow New Jersey to comprehensively assess its waters. These designs allow New Jersey to statistically determine what percentage of its waters do or do not meet water quality standards of support of designated uses. The method may also allow the Department to project possible water quality conditions to unmonitored waters based upon patters observed in monitored waters.

USEPA recommends that states include the use of probabilistic monitoring and assessment methods to increase the number and percentage of waterbodies assessed in making assessments for 305(b). While probabilistic statistical assessments can provide reasonable estimates of water quality with known confidence, the Department believes that application of the results to non-monitored stream reaches is not appropriate for 303(d). The Department does believe that it is appropriate for 305(b) reporting.

In Section 4.1.3 of the Methods Document, the Department has outlined, for information and discussion, several approaches to be explored which could better utilize the probabilistic monitoring data. The Department has not decided on the best approach at this time and will include the methodology for assessing the data from the probabilistic monitoring program when developed. In generating the 2002 Integrated List, the Department has not used probabilistic statistical assessment methods for assessing or listing waterbodies; rather, listings were done solely on monitored waters only using data taken from probabilistic networks but not using probabilistic projections.

Comment 42: Page 14.Item 2.makes no sense and should be re-written. What is a statewide status station and where is it explained? (11)

Response to Comment 42: Two statewide status stations per WMA were randomly selected each year from the set of ~800 Benthic Macroinvertebrate Network stations to provide a probabilistic monitoring component. A statewide status station is described in Appendix II – Data sources for the 2002 New Jersey Integrated Report of the proposed 2002 Integrated Water

Quality Monitoring and Assessment Methods Document public noticed with the Integrated list. The section on Data Sources will also be included as Appendix II in the final 2002 Integrated Water Quality Monitoring and Assessment Report.

Comment 43: Page 14, The commenter concurs with the EPA's position that assessment units sampled through a probabilistic design may not have enough data to make attainment decisions and should be placed in Category 3t and agrees with the implication in item 5 that sites "estimated with significant confidence" should be determined to be assessed as Non-Attaining. (11)

Response to Comment 43: The Department acknowledges your concurrence with USEPA's guidance and the Department's implementation of this guidance.

Comment 44: Page 14, Table 4.3, The Department should explain the basis for accepting 8 samples of un-ionized ammonia over five years as being representative of a waterbody particularly when one understands that ammonia's toxicity is linked to temperature and pH.(11)

Response to Comment 44: The Department is aware that ammonia's toxicity is linked to temperature and pH. To calculate the concentration of un-ionized ammonia, pH and temperature data must also be collected at the time of sampling un-ionized ammonia. The Department believes collecting data quarterly over a five year period will account for seasonal and annual variations. USEPA's "Guidelines for the Preparation of Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates" (EPA-841-B-97-002B, September 1997) recommends a minimum of 10 samples collected on a quarterly basis. Less than 10 samples may be used if the Department determines that other factors, such the magnitude or frequency of violations make consideration of less than 10 samples appropriate. If the Department has less than ten samples and 2 or more samples violate the surface water quality criteria, the waterbody will be listed in Sublist 5. However, if there are eight samples with less than 2 violations, the waterbody will be placed in Sublist 3 (insufficient data).

Comment 45: Page 15, Section 4.2.2, The Department should reference the procedures that have been employed in assessing metals in non-tidal waters and explain the results obtained to date or indicate when this procedure is anticipated to be used. (11)

Response to Comment 45: The data requirements in Table 4.4 and the assessment methodology identified in Table 4.5 are the assessment procedures developed by the EPA-DEP workgroup. Additional information on the development of this assessment method have been added to the Methods Document as Appendix V. As stated in 4.2.2, The Department intends to apply this assessment to current data as well as reassessing the data used in the 1998 List. The results of this procedure are discussed in the 2002 Integrated Monitoring and Assessment Report.

Comment 46: Page 15, Table 4.4,What is the basis for accepting 4 samples of metals over five years as being representative of a waterbody? It would appear that the metals data requirements only apply to freshwater systems because of the flow requirements. Please clarify this interpretation and discuss what methodologies should be employed under other flow conditions (e.g., tidal). (11)

Response to Comment 46: In re-sampling waterbodies previously listed as impaired for metals, the Department noted that most of the historic violations were not confirmed when "clean technique" sampling and analysis were employed and metal violations were not as widespread as originally anticipated. The Department decided a better use of resources would be to sample for total recoverable metals first to determine the presence or absence of metals with additional follow up monitoring for both dissolved fraction and total recoverable when total recoverable data exceeded the criteria for either the dissolved fraction or total recoverable. When ten or more randomly collected samples are available, it is assumed that the sampling occurs over different flows. For the reevaluation of historic data, only four samples are used in the metals evaluation to confirm historic violations. Because fewer random samples would not insure wet and dry conditions, sampling must be completed for both high and low flow conditions. The metal methodology is more stringent than conventional parameters for listing purposes as one violation of either a high flow or low flow sample will result in the waterbody being listed in Sublist 5. The methodology was developed and applied to freshwater streams only. Additional methods for tidal streams will be developed in the future.

Comment 47: Page 16, Table 4.5, The first sentence under "Full Attainment" should be clarified. For example, if a parameter's MDL is 2 and the criterion is 4 and then 3 subsequent measurements under appropriate stable baseflow and elevated flow conditions of 3, 5 and 5 are recorded, one could contend that full attainment is met. The commenter does not believe that is what the Department intended. The statement under Non-Attainment is confusing and implies that waters would be classified as Non-Attaining if detectable concentrations are found in any one sample not necessarily an exceedence of criterion. (11)

Response to Comment 47: The Department agrees with this comment and has amended Table 4.5. The entire Section 4.2 of the Methods Document which includes amended Table 4.5 was re-proposed for public comment on August 5, 2002 (See 34 N.J.R. 2868(b)).

Comment 48: Page 17, Section 4.2.3, The commenter disagrees that Section 4.1.3 discusses in detail the probabilistic design. (11)

Response to Comment 48: The section (4.2.3) has been redrafted and the reference to Section 4.1.3 for more detail has been removed from the Methods Document.. Section 4.2.3 explains how the Department has chosen sites to represent a probabilistic monitoring design. Additional information on probabilistic monitoring and its use in the Integrated List can be found in a USEPA guidance memo for developing the 2002 Integrated List at http://www.epa.gov/owow/tmdl/2002wqma.pdf.

Comment 49: Section 4.12 under Modified Water Quality Assessment. Data sets of less than 10 samples; sampling less than quarterly; or duration of less than 2 years may lead to an assessment of "insufficient data". Note that quarterly sampling will result in less than a 10 sample data set. Does this mean that quarterly sampling programs should be increased to 5 times a year to ensure that the 2 years will have 10 pieces of data? (Note that there are 2 assessment methods, one for 10 or more and one modified for less than 10.) (7)

Response to Comment 49: Most sampling is conducted quarterly, and although the minimum duration is 2 years, the Department has generally used the most recent 5 years of data which usually results in 20 samples. The modified assessment allows the Department to consider data which has not been collected quarterly (i.e. temperature data collected during the summer months) as well as data collected for less than 2 years duration (i.e. diurnal DO data) which clearly indicate an impairment or attainment even though the minimum data requirements have not been met.

Section 5

Comment 50: Page 18, Section 5.0, Assessment Method for Designated Use Attainment. The Department needs to explain how the information presented in this section relates to the 305(b) reporting and 303(d)/Category 5 listings. (11)

Response to Comment 50: The Integrated List compares readily available data to "applicable water quality standards" which include numeric criteria, narrative criteria, water body uses, and antidegradation requirements. Section 5 outlines the assessment methodologies for the designated uses identified in the SWQSs as opposed to Section 4, which outlines the assessment methodologies for the numeric criteria. Additional language has been added to Section 5.0 for clarification.

Comment 51: Page 18, Section 5.1, The Department states that for waters where biocriteria are not available the assessment of aquatic life designated uses will be based on existing and readily available biological community data. The Department should establish written criteria to determine the quality of the data and whether it should be used for assessing aquatic life uses. In addition, the Department should explain to the regulated community how it evaluates the data (e.g., what metrics are employed, how are they scored and how are reference locations used, if at all). The Ohio Environmental Protection Agency (OEPA) has protocols and well described methods to address this determination. This section is very arbitrary, unclear, and should be removed until it can be defended on a scientific basis and be more thoroughly explained. (11)

Response to Comment 51: The protocols used by the Department were developed by EPA and have been in use nationwide since 1990. The technical validity of the methods has been recognized and accepted by the environmental and aquatic biological community. The Department regards this indicator as valid in assessing the narrative criteria contained within the Surface Water Quality Standards and expressed as "maintenance, migration and propagation of the natural and established aquatic biota." The data quality criteria for biological assessments are delineated in Table 5.1 for lakes, the first paragraph under the heading of 5.1.2 for rivers and streams, and the second paragraph of section 5.1.3 (along with table 5.4) for tidal waters. Detailed quality assurance documentation is required for each entity supplying data used in assessments; however, these separate documents would not be practical to incorporate in these Methods Document as appendices. They are available from the Department upon request.

Detailed descriptions on how the individual metrics are calculated are available from USEPA's Rapid Bioassessment Protocols for Use in Streams and Rivers, EPA/444/4-89-001, beginning on pp. 6-12. The Department worked with USEPA Region II staff in calibrating the individual metrics for New Jersey. USEPA Region II is finalizing the document outlining these procedures

and the Department will post theses procedures on its web site when available. Information regarding the metrics employed, individual site scores and the individual taxa recorded at specific sites are contained within the AMNET reports issued by the Department's Bureau of Freshwater and Biological Monitoring. http://www.state.nj.us/dep/wmm/bfbm/downloads.html.

Comment 52: Page 18, Section 5.1.1, The Department should define what it means by the term "experienced" fishery biologist?(7,11)

Response to Comment 52: An "experienced" fishery biologist is one who possesses, at the minimum, the following qualifications: A Bachelor's degree in one of the Biological Sciences or Natural Resource Management with a major concentration in Fisheries Science and/or Wildlife Science and one year of professional experience in fisheries biology and/or development of fisheries management programs. A Master's degree in fisheries management or a related field can be substituted for one year of experience in fish taxonomic identification and field collection.

Comment 53: Page 18, Tables 5.1 and 5.2, The Department should explain the statement "sufficient to establish recruitment capability" or "consistent recruitment" and provide an example or citable reference. What is the minimum number of years of data required for this assessment and at how many locations? (11)

Response to Comment 53: Consistent recruitment is defined as the stability of the fish community through time. Recruitment is established by means of a single season of sampling; multiple season sampling or multi-year sampling is not necessary. Recruitment sampling involves shoreline seining to capture the young of the year and a combination of electrofishing and gill netting to assess the adult population. Seining (young of year) provides recruitment status for the particular year being sampled, while the age distribution from the older fish (via electrofishing and gill netting) provides the recruitment status for the years previous to the sampling. These sampling and assessment methods are standard operating procedures for the Bureau of Freshwater Fisheries within the Department.

In performing the shoreline seining, the number of sites sampled to establish recruitment is variable and depends upon both the size of the waterbody as well as the degree of accessibility to the needed locations to pull a seine. Assessing a small park pond may require 5 sites while a large lake such as Round Valley Reservoir may require upwards of 50 sites. Spruce Run Reservoir has been assessed by the Department using 15 sites with three hauls per site. If seining is not possible due to an inaccessible shoreline, recruitment is assessed solely through electrofishing/gillnetting.

Comment 54: Section 5.1: What is the logic behind the minimum catchment area of 6 square miles? (3)

Response to Comment 54: The minimum catchment size for small streams is based upon two separate analyses of AMNET sites within the Delaware and Raritan drainages. The method underwent a technical review by an interagency committee comprised of aquatic biologists from the Department, USEPA Region II and USGS. In the first analysis, the aquatic biologist from EPA Region II who had calibrated the macroinvertebrate protocols for application in New Jersey

reviewed the species lists and counts of macroinvertebrate individuals derived from "moderately impaired" sites in headwater streams within the two river basins. This biologist then provided the Department with an evaluation of the possible factors underlying the assessment of moderate impairment and by careful inspection indicated sites which were assessed as impaired due to characteristics that tend to be unique to very small stream or headwater conditions.

The second assessment was to then obtain an estimate of the optimum cutoff of catchment size whereby the effects of small stream conditions could be isolated from the main pool of sites we were reviewing. The goals of the exercise in order of priority were to:

- Minimize the number of sites assessed as moderately impaired solely due to having fauna characteristic of headwater streams going on sublist 5 (Impaired).
- Maximize the number of sites assessed as moderately impaired solely due to having fauna characteristic of headwater streams going on sublist 3 (slated for additional analysis).
- Minimize the number of sites with acceptable assessments of moderate impairment going on sublist 3.

The results of the assessment pointed to a optimum catchment size cut off of 6 square miles. Moderately impaired sites possessing catchments of less than 6 square miles go into Sublist 3, sites possessing catchments of greater than 6 sq. mi. go on sublist 5.

Comment 55: Page 19, Table 5.2: Aquatic Life Designated Uses Assessment Methods for Lakes: The table does not include a category that would result in "Insufficient Data," but there are "Full Attainment" and "Non Attainment" results. There is also an "Insufficient Data" category in the assessments for streams and rivers. (14)

Response to Comment 55: In generating the Integrated List, the only data readily available for use in lake aquatic life assessments were assessments provided by the Department's Bureau of Freshwater Fisheries. These assessments were based upon very thorough fin-fish inventories at selected lakes. Lakes without data or assessments to identify impairment from any source, would result in listing the lake in Sublist 3. Table 5.2 has been amended to include a sublist for "Insufficient Data" which would include everything in Sublist 3.

Comment 56: Section 5.1.2 - A standard procedure should be established and included in the methods document for assessing AMNET sites (Aquatic Life Designated Use Assessment in Rivers) during extended drought conditions. For example, under extended drought conditions, sites with degraded scores should only result in a "Future Assessment Required" rating rather than "Non Attainment" or the like. (3)

Response to Comment 56: Under the section entitled "Flow Effects" within the Methods Document (Section 5.1.2) , the Department does indicate that the standard methods of AMNET site assessment may be modified to take drought conditions into account. When and if sites reflect impaired status due to extensive drought induced low flow conditions that are not known to be anthropogenic, they will be assigned to Sublist 3 pending a re-assessment.

The Department does not have a formal protocol other that to note when a formal "Drought Emergency" is declared and noting in the record that specific sites have been sampled under these conditions.

Comment 57: (5.1.2) A headwater reach with a catchment area less than 6 square miles was the only reference point for a recent RBA/Rosgen survey of the Manasquan. These sites provide valuable referent information about a watershed and may need greater protection against stormwater volume than downstream because of its fragile nature. In the 'Flow Effects' section there is no recognition of the negative effects on macroinvertebrates of elevated stormwater volume and increases in the frequency of the channel forming storms due to urbanization. (7)

Response to Comment 57: The Department agrees that stormwater flows have a detrimental effect upon benthic communities. However, the section referenced entitled "Flow Effects" was not intended to refer to anthropogenic disturbances to flow but to account for natural reductions in flow due to the frequent and extended droughts which our region has been recently experiencing. These reductions in flow can lead to assessments of biological impairment which are the result of natural events and not amenable to TMDLs.

Comment 58: Table 5.10 –The instream lake water quality criteria is 0.05 ppm. Why does the method appear to use 0.02 ppm? (3)

Response to Comment 58: The 0.02 ppm for total phosphorus (as a wintertime mean) is a target value provided by USEPA's Clean Lakes Program intended to delineate eutrophic lakes from mesotrophic ones. The water quality criteria is 0.05 ppm total phosphorus. The New Jersey Clean Lakes Program applied the target value to New Jersey Lakes, as part of a set of metrics. This is not a use attainment evaluation, but rather a predictor of potential future primary productivity within the growing season. The impairment status of lakes (section 5.3.1 of Methods Manual) is based upon actual use impairment as reflected in the public's submittal of lakes to the Clean Lakes Program as candidates for restoration grants.

Response to Comment 58: The 0.02 ppm for total phosphorus (as a wintertime mean) is a target value provided by USEPA's Clean Lakes Program intended to delineate eutrophic lakes from mesotrophic ones. The water quality criteria is 0.05 ppm total phosphorus. The New Jersey Clean Lakes Program applied the target value to New Jersey Lakes, as part of a set of metrics. This is not a use attainment evaluation, but rather a predictor of potential future primary productivity within the growing season. The impairment status of lakes (section 5.3.1 of Methods Manual) is based upon actual use impairment as reflected in the public's submittal of lakes to the Clean Lakes Program as candidates for restoration grants.

Comment 59: Section 5.3. The methodology presented in Section 5.3 – Lake Quality Assessment Method and Tables 5.8 and 5.10 classifies lakes as either mesotropic (total phosphorus less than 0.02 ppm TP [winter mean]) or eutrophic (total phosphorus greater than or equal to 0.02 ppm TP [winter mean]). Therefore, lakes classified as eutrophic would mostly likely appear on the Category 5 List. Additional technical studies are recommended to establish the best management and technical approaches to aid lake communities in their journey to achieve the specified target value of 0.02 ppm TP. At the present time, most lakes would find

this target value (to allow for removal from Category 5) almost unachievable. While a target value of 0.02 could be retained as a stretch goal, a more realistic (achievable) TP level should be considered regarding whether a lake is on or off the Category 5 List; subject to further analysis, a value of 0.06 ppm TP is proposed. (1,2)

Response to Comment 59: Lakes are are listed on Sublist 5 when there is evidence of use impairment, not because they are classified as eutrophic. When impaired lakes are subject to a TMDL, the target phosphorus level is a "not to exceed" 0.05 mg/l in accordance with the Surface Water Quality Criteria for lakes.

Comment 60: Page 25, Section 5.3.1, second to last paragraph: The first sentence states that, "the Department will review all information sources which document restoration efforts for use impaired lakes." There is no mention of the types of restoration efforts that will be reviewed, nor is there reference to doing the same for rivers and streams that have also undergone restoration efforts. (14)

Response to Comment 60: The Department will consider restoration actions which were identified and implemented through Clean Lakes Program Phase II reports and TMDLs when listing/delisting. These restoration efforts are largely nonpoint source management efforts such as stormwater and septic system controls, streambank stabilization, dredging, and wildlife management. The Department has not specified particular restoration efforts in the Methods Manual so as not to limit available options. The status of use attainment or expected improvements in water quality of rivers and streams is assessed principally through the Department's routine monitoring program. The Department requires a monitoring and assessment as part of any Department funded restoration project. Additionally, when necessary, local special studies may be employed in areas or for parameters not adequately covered by routine monitoring.

Comment 61: Page 25, Section 5.3.1, last paragraph: The Department states that assessment data may be twenty-years old with regard to recreational use support. The Department may wish to verify that these bodies of water have not degraded from human impacts during the past twenty years.(14)

Response to Comment 61: As stated in the Methods Document, the Department has assumed that if no remedial measures have been taken, that the conditions are the same or worse as observed twenty years ago. Public lakes on Sublist 3 will be assessed for the 2004 Integrated List.

Comment 62: Section 5.6 – FW1 waters are also designated for drinking water uses – why are they not included in the Drinking Water Supply Designated Use Assessment Method? (3)

Response to Comment 62: The Department did not include Drinking Water designated use assessment for FW1 waterbodies because drinking water use was not specifically identified. N.J.A.C. 7:9B-1.12(a) identifies the designated uses for FW1 waters as: Set aside for posterity to represent the natural aquatic environment and its associated biota; Primary and Secondary recreation; Maintenance, migration and propagation of the natural and established biota; and,

Any other reasonable use. The Department has applied the Drinking Water Designated Use assessment methodology which uses nitrate concentrations to assess compliance to FW1 water. All FW1 waters meet the nitrate criteria. The Department plans to modify the Methods Document for 2004 to incorporate this change.

Comment 63: Page 19, Table 5.2 should include the minimum number of years needed to make the determination (i.e., like the other criteria) and the basis /rationale for the number. In addition under the definition of "Threaten Waters" the commenter does not agree with the Department that the status for lakes should operate under a broader time window. The current reporting cycle to USEPA is two years and the Department should report on threatened waters within this period. Further, the commenter contends that more than just a decline in fishery quality is required to make a determination that the waterbody should be placed in Category 5. (11)

Response to Comment 63: In regard to the comment that Table 5.2 should include the minimum number of years needed to make the determination, lake fishery status, including recruitment, is assessed within a single season. Multiple year sampling is not necessary. In regard to the comment concerning "Threatened Waters", the 2-year window contained within the "Threatened" category for most designated uses (except aquatic life in lakes) is based upon an assumption of relatively frequent monitoring (at minimum quarterly) which allows either trends assessments or water quality modeling to detect possible future criteria violations within relatively short time frames, such as 2 years. Lake fishery assessments, as well as the assessments of land use changes that can potentially influence lake fisheries, occur at much lower frequencies and hence require the application of a significantly broader time window with which to apply the threatened category.

In regards to the comment "more than just a decline in fishery quality is required to make a determination that the waterbody should be placed in Sublist 5"; 40 CFR 130.7 (c)(1)(ii) states that "TMDLs shall be established for all pollutants preventing or expected to prevent attainment of water quality standards". USEPA guidance defines "threatened" as water which fully support their designated uses but that may not fully support uses in the future unless pollution control action is taken (USEPA. "Guidance for 1994 Section 303(d) Lists", November 26, 1993). The definition of "threatened" as applied in Table 5.2 is consistent with USEPA guidance for 303(d) listings.

Comment 64: Pages 19-20, Section 5.1.2 and Appendix IV describe the Department's effort to use benthic macroinvertebrate data to assess impairment in rivers and freshwater streams. The Department should clarify whether this section is just applicable to freshwater rivers, freshwater streams, or all freshwater waterbodies, except the Pinelands Area.

Response to Comment 64: The assessment method described in section 5.1.2 is for fresh water non-tidal rivers and streams. The title and text have been edited to clarify this. As indicated in response to comment 17, the Department has listed AMNET sites located within the Pinelands on Sublist 3. The Department in conjunction with the Pinelands Commission is working on adapting the state-wide methodology to the Pinelands waters.

Comment 65: Pages 19-20, Section 5.1.2 and referenced Appendix IV as written do not provide the benthic metrics (e.g., density, diversity, EPT taxa, species tolerance, etc.) that are employed by the Department and how they are scored to determine impairment. How are the data from a specific site compared to reference location data, if at all? How many seasons/years of data are needed to make a valid assessment? The rationale and methodology for using this type of data to determine impairment needs to be clearly explained. Appendix II, page 3 describes the Ambient Biological Monitoring Network (AMNET) and describes different New Jersey Impairment Scores (NJIS) but does not explain how the scores as derived. (11)

Response to Comment 65: Information regarding the metrics employed, individual site scores and the individual taxa recorded at specific sites are contained within the AMNET reports and may be obtained from http://www.state.nj.us/dep/wmm/bfbm/downloads.html. Detailed descriptions on how the individual metrics are calculated are available from USEPA's Rapid Bioassessment Protocols for Use in Streams and Rivers, USEPA/444/4-89-001, beginning on page 6-12. The Department worked with USEPA Region II staff in calibrating the individual metrics for New Jersey. USEPA Region II is finalizing the document outlining these procedures and the Department will post theses procedures on its web site when available..

Comment 66: As the Department explains on page 20, non-attainment for the benthic macroinvertebrate data could be due to extended drought conditions. Based on the commenter's experience, flooding can cause scour, which can greatly alter the benthic macroinvertebrate community. The commenter believes this data should not be used for listing impaired waterbodies until the process has undergone peer/ public review and comment. If the Department retains this assessment method, the commenter suggests that it be placed in Category 3 (i.e., Insufficient or no data and information are available to determine if any designated use is attained) until the methods are developed and reviewed. (11)

Response to Comment 66: The Department agrees that scour can impair benthic communities, but excessive scour and storm flows can be the result of excessive urban development within watersheds and such anthropogenic landscape alterations and resulting flows are ground for listing in Sublist 5. The cumulative impacts of development and their documented impacts upon base and storm flows are one the many reasons biological monitoring is performed.

Regarding the overall validity of the benthic metrics and their applications, the protocols used to assess benthic macroinvertebrates were developed by USEPA and have been used nationwide since 1990. The technical validity of the methods has been recognized and accepted by the environmental and aquatic biological community. The Department believes that the sampling protocols developed by USEPA and utilized by the Department adequately evaluate aquatic life impacts to benthic macroinvertebrate communities. An assessment of the habitat is also performed as part of the AMNET monitoring to assist in this assessment. Habitat information is also available at: www.state.nj.us/dep/wmm/bfbm

Comment 67: The Department should adopt the current scientific methods used by the Pinelands Commission science staff to assess use impairments within the Pinelands (see References Cited (The commenter has provided a list of references that it states support this position). These methods should be incorporated into the proposed 2002 *Integrated Water*

Quality Monitoring and Assessment Methods Document since they are better suited for evaluating the unique aquatic ecosystems of the Pinelands than the current method of using macroinvertebrates. (17)

Response to Comment 67: The Department agrees the assessment methods employed by the Pinelands Commission are appropriate to assess use impairment within the Pinelands region. The Department will be working with the Pinelands Commission to see how best to incorporate their methods into the Department's methodology. Concurrently, the Department is working with the Commission to explore the possibility of employing modified benthic macroinvertebrate assessments to Pinelands waters. Any modified assessment methods will be explained in an revised Methods Document which will be made available to the public for comment prior to utilization of the methods. These waterbodies will then be reassessed and placed in the appropriate Sublist. In the meantime, these PL waters will remain in Sublist 3.

Comment 68: Page 20, Table 5.3, The terms "non-impaired", "severely impaired" and "moderately impaired" as related to benthic monitoring need to be defined before this assessment method can be employed. (11)

Response to Comment 68: The Department uses the Rapid Bioassessment Protocol developed by USEPA. A non-impaired community is defined as a community comparable to other undisturbed streams within the region, with a maximum taxa richness, balanced taxa groups, and a good representation of intolerant individuals. To be classified an Non-impaired, the site must receive a Rapid Bioassessment Protocol score between 24 – 30. Severely impaired sites are represented by a few taxa that are very abundant. Only tolerant taxa are present. Sites with scores less than 6 are classified as Severely Impaired. Sites with scores between 9 and 21 are considered Moderately Impaired with reduced macroinvertebrate richness. Taxa composition changes result in reduced community balance and a loss of intolerant taxa.

Comment 69: We are requesting the water monitoring data utilized in determining various degrees of impairment for stream bodies. (13).

Response to Comment 69: Information regarding the metrics employed, individual site scores and the individual taxa recorded at specific sites are contained within the AMNET reports issued by the Department's Bureau of Freshwater and Biological Monitoring. These can be accessed via the web at http://www.state.nj.us/dep/wmm/bfbm/downloads.html. Detailed descriptions on how the individual metrics are calculated are available from USEPA's Rapid Bioassessment Protocols for Use in Streams and Rivers, USEPA/444/4-89-001, beginning on page 6-12.

Comment 70: The Department is causing an undue economic hardship by attempting to impose the unrealistic and probably not achievable 0.1 mg/l effluent discharge limitation for phosphorus. The commenter is extremely concerned regarding the potential implementation of the 0.1 mg/l phosphorus effluent limitation and the adverse impacts it would impose on the communities that comprise the Musconetcong Sewerage Authority Sewer Service Area. It appears that the Department cannot satisfactorily monitor and control all non-point sources along stream banks, and therefore it has decided to impose this unrealistic limitation on all point source POTW discharges. It must be stated that if a stream has been confirmed to be impaired based on

excessive phosphorus concentrations due to non-point source discharges, providing a phosphorus effluent discharge of 0.1 mg/l will not eliminate this impairment.(13)

Response to Comment 70: The comments concerning phosphorus effluent limitations are beyond the scope of this action. The phosphorus criteria for streams provide that: Lakes: "Phosphorus as total P shall not exceed 0.05 (mg/l) in any lake, pond, or reservoir, or in a tributary at the point where it enters such bodies of water, except where site specific criteria are developed…" and for streams; "….phosphorus as total P shall not exceed 0.1(mg/l) in any stream, unless it can be demonstrated that total P is not the limiting nutrient and will not otherwise render the waters unsuitable for the designated uses." Streams that do not meet Surface Water Quality Criteria, including the phosphorus criteria, are required to be identified and listed.

Comment 71: Page 21, Section 5.1.3, Estuarine Waters states that the aquatic life assessment is based upon quarterly subsurface DO levels recorded within a recent five-year time span. The Department states that the assessment and listing methodology are the same as presented in Table 4.2. The commenter suggests deleting this section because DO is an indirect indicator of aquatic life uses (see Department statements on pages 20-21) and the DO criteria are already included in Section 4.2. If this section is retained, the explanation of "Data Age" is unclear and suggests the following: Available data representative of present water quality and collected consistent with an approved QAPP. (11)

Response to Comment 71: The Department believes Section 5.1.3 clearly delineates the assessment methodology employed for coastal waters. This section reiterates some of the information contained in Table 4.2 for the sake of clarity. The fact that dissolved oxygen is an indirect indicator does not diminish its value as an indicator of potential biological impairment, especially since it represents one of the principal stressors within the system being assessed. As stated above, the Department assumes that the most recent five years of data will be representative of present water quality. All data must be collected consistent with an approved QAPP.

Comment 72: Page 21, Ocean Waters, The Department should provide Fig.A5.1 for review and comment. (11)

Response to Comment 72: Figure A5.1 referred to an USEPA map showing the sampling locations for the USEPA dissolved oxygen data collected in the open ocean. All the information depicted on the Figure was provided in the document. The Department has removed the reference to Figure A5.1 in the final Methods Document and, more appropriately, included this figure in the Integrated Report as Figure 3.3a-1. Additional information on this dataset is available on USEPA's webpage at http://www.epa.gov/Region2/desa/nybight

Comment 73: Page 21, Table 5.4, The Department should explain the basis for quarterly sampling in tidal rivers.

Response to Comment 73: Quarterly sampling, when applied over several years, provides the Department with representative water quality over seasonal and tidal cycles.

Comment 74: Page 21, Table 5.4, the Department states that the "minimum" data requirements for conventional parameters are 10 samples collected quarterly over two years for different hydrologic units that are highly variable in size. The Department should explain how it derived these minimum requirements.(11)

Response to Comment 74: See Response to Comments 28 and 29.

Comment 75: Page 22, Table 5.5, Line 3 should be 10% not 11%. (11)

Response to Comment 75: The Department agrees and has made the correction.

Comment 76: Page 23, Table 5.6: Data Requirements for Assessment for Recreational Designated Uses: Since the main indicator being used for this assessment is fecal coliform, which has been shown to increase after a storm event, the "Minimum Sampling Frequency" should include information taken after a significant rain event (of 1" or greater in a 24 hour period). Many health departments in Connecticut use this procedure to determine safety of swimming beaches. (14)

Response to Comment 76: FW2 waterbodies are assigned a designated use of primary contact recreation. The data collected randomly by the Department to assess rivers and the estuary are collected at sufficient frequency over a five year period that wet weather flows are included in the assessment. This assessment is to evaluate whether the use is attained. The Department of Health and Senior Services is responsible for regulating bathing at public beaches. The Department uses the number of days closed provided by the health departments to assess recreational use at designated bathing beaches.

Comment 77: Page 29, Section 5.4, first full paragraph: The third sentence contains a typographic error. The sentence currently reads as, "This assumption will bet tracked." Please replace `bet' with `be.' (14)

Response to Comment 77: The Department agrees and has made the correction.

Comment 78: Pages 27-29, Section 5.4, Many states currently base impairment decisions for 303(d) purposes on the existence of fish consumption advisories. These advisories are not water quality standards, and generally have not been subject to the public comment and rulemaking procedures required for water quality standards. In addition, the validity and accuracy of fish tissue data and risk assessments used by state health departments in issuing such advisories can vary. Therefore, States should not automatically list waters as impaired when advisories are issued, and should adopt specific water quality criteria to be used in place of advisories in making impairment decisions. The commenter refers the Department to the report "Preparation of Integrated Water Quality Monitoring and Assessment Reports" prepared by Barnes & Thornburg, and Parsons for the Federal Water Quality Coalition and others, for additional discussion of this issue. (11)

Response to Comment 78: USEPA has provided states with guidance that strongly advises using fish consumption advisories as a means to assess public health/aquatic life uses since the bioaccumulation of toxics in fish can have both negative human health and ecological effects. See: Guidance to States on preparing Comprehensive Water Quality Assessments 305(b) Reports including Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) reports) and Electronic Updates: Report Contents Office of Water United States Environmental Protection Agency. USEPA-841-B-97-002A. September 1997. Subsequently USEPA developed a Consolidated Assessment and Listing Methodology (CALM) for use by the states (Consolidated Assessment and Listing Methodology: Toward a Compendium of Best Practices. First Edition. July 2002. U.S. Environmental Protection Agency. Office of Wetlands, Oceans, and Watersheds (http://www.epa.gov/owow/monitoring)) which states that concentrations of pollutants in fish tissue can be used in risk-based calculations to assess attainment of the fish consumption use as well as to issue fish consumption advisories. The Department recognizes some of the issues with using data from fish consumption studies for local water quality assessment and some of the problematic aspects of seeking local sources and causes for bioaccumulated contaminants in fish, some species which may be highly mobile and even migratory. However, the Department believes the high quality of its data, the broad range of species captured, and, in many instances, the broad geographical areas identified, justifies their use in assessing localized water quality due to toxics bioaccumlation. Existing water quality criteria for toxics in water takes into consideration bioaccumulation. These water quality standards serve as endpoints for human health protection through effluent limitations and TMDL development and are expected to reduce levels in both the fish and the ecosystem. If Surface Water Quality Criteria are below the method of detection, results of sampling the water column often are non-detect. Therefore, the Department must rely on fish tissue contamination to indicate an exceedance of criteria. Fish tissue concentrations resulting in a fish advisory reflect the presence of an actual problem. Therefore, the Department has determined that a fish advisory for a pollutant with a surface water quality criteria is a valid basis for placing a waterbody in Sublist 5. The Department reviewed fish advisories and determined that if the advisory was based upon current fish tissue data, the waterbody would be listed as impaired on Sublist 5. Waterbodies with historical fish advisories without current information were placed on sublist 3.

Comment 79: Page 28, Section 5.4,The commenter concurs with the Department that the advisories based on PCB/dioxin/pesticide data collected in the mid-1980s be placed in Category 3, (insufficient or no data and information are available to determine if any designated use is attained), until new data is collected and evaluated. Based on this information, the Department should list the Delaware River/Estuary as Category 3 on the 303(d) list. (11)

Response to Comment 79: The Department agrees and made the change in the reproposed Integrated Report. (34 N.J.R. 2868).

Comment 80: How do the two tables on page 28 relate to each other? (11)

Response to Comment 80: Table 5.11 defines the Fish Consumption Designated Use Assessment methodology. The second table was duplicative and has been removed.

Comment 81: Page 28, Section 5.4, The commenter supports the Department's plan to address mercury issues through the use of an aggressive Mercury Phase-out strategy that focuses on the issue from a national perspective, rather than the development of a TMDL. (11)

Response to Comment 81: In reviewing the draft Integrated List, USEPA Region 2 indicated that the Department did not have adequate basis for listing waters impacted by mercury fish advisories in Sublist 4 at this time. USEPA required the Department to place fish advisories on Sublist 5 until such time as new data was collected indicating that the advisory could be lifted or a mercury phase-out plan is established that meets the TMDL requirements. The Department has placed waterbodies listed for mercury-based fish advisories in Sublist 5. See Response to Comment 78.

Section 6:

Comment 82: The discussion of spatial extent is written well, but better graphics are needed. The figures in the PDF file have text boxes that are improperly sized with illegible text and not printable (in all formats). If legible, these figures would be very useful in illustrating how spatial extents were defined. Schematic graphics rather than GIS maps may be more appropriate for illustration purposes.(3)

Comment 83: The poor quality of the electronic versions of these figures makes it impossible for the reader to even infer what message was intended. The discussion on, and quality of, Figure 1 is adequate. Text that has been inserted into Figure 5 (included in the electronic version of the document) is not readable. The discussion implies Figure 5 shows two scenarios. Either the discussion is not clear or the figure is wrong because two scenarios are not evident. (11)

Comment 84: Pages 41 and 42, Figure 3, Figure 4, and Figure 5: The labels on each of the maps need to be increased in size so that one can read the entire label. (14)

Response to Comments 82 through 84: Problems occurred when the maps were integrated into the document. This issue has been corrected and the maps have been replaced.

Comment 85: Page 33, Section 5.8, Agricultural Water Supply Designated Use Assessment: If the crops that are being produced are consumed by humans, the Department may want to consider including pathogen contamination of the water supply to protect public safety. (14)

Response to Comment 85: A recent study by Rutgers University has noted that pathogens in a water supply may in fact impact crops. However, the Department does not have surface water quality criteria at this time for the protection of the agricultural designated use. The Department intends to review and revise the methods document, as appropriate, prior to development of the next Integrated List. The Agricultural Water Supply Assessment may be modified at that time if the Department has adopted a water quality criterion for pathogens applicable to agricultural water supplies.

Comment 86: Page 34, Section 6.0,– The objectives and the information that this section is intended to convey are not clear. What is the purpose of a "spatial extent"? Does it define a segment of a waterbody within which the water quality is assumed to be the same as the water

quality measured at a single point within the waterbody? Or, as implied by Paragraph 3 of Section 6.1, does it define a segment for which some type of "monitoring" will be performed? Second, the USEPA (2002) reference that is cited is not provided (see Section11, References) therefore one cannot independently verify this information. The Department should explain the new National Hydrography Database (NHD) and polygraph coverage approach or provide a reference that can be reviewed. In addition, Section 6.0 includes five figures. Only Figures 1 and 5 are discussed in the text. Figures 2, 3 and 4 are not mentioned. (11)

Response to Comment 86: Text has been added to clarify the term "spatial extent." The spatial extent is a representation of a waterbody associated with a sampling site. For example, the sampling site 01382000 is located on the Passaic River at Two Bridges in Fairfield Twp. The spatial extent for this site is calculated as 13.7 miles upstream and 0.1 miles downstream of the sampling site on the Passaic River. The assessment results from the sampling site are considered representative of the 13.8 (13.7 miles upstream and 0.1 miles downstream of the sampling site) miles of river. In other words, spatial extent is associating data from a single sampling point to a stretch of river. With this technique, the Department has expanded the number of river miles in the State that meet designated uses, do not meet designated uses, or have insufficient data to make an assessment. References to the National Hydrography Database (NHD) may be found at http://nhd.usgs.gov/index.html. Maps will be provided to show how polygons were used to represent lakes, estuaries, and ocean waters. This new methodology expands the river miles assessed. In preparing the 1996 list, for example, the Department assumed that the water quality observed at the sampling location applied 2.5 miles above and 2.5 miles below the monitoring location, regardless of the hydrologic conditions. The reference was accidentally omitted and has been added in the final version. Figures 2,3,4 have been modified and referenced in the text.

Comment 87: Page 34, Section 6.1.1, in Paragraph 2, what is meant by spatial extent of AMNET monitoring site "results"? Are the results meant to be water quality measurements? If so, how would such measurements "consider the stream order of the reach"? If the results are not water quality measurements, what are they and how do they "consider the stream order of the reach"? The presentation is confusing. (11)

Response to Comment 87: The word "results" has been removed to simplify the sentence. However, "results" represented the biological impairment rating of the AMNET site. See the explanation of the term spatial extent in Response to Comment 86.

Comment 88: Page 34, Section 6.1.1, the Department should provide a figure(s) to show the sample locations and/or provide a table(s) with written station descriptions. The regulated community could then discern if sampling was being performed in the vicinity of their facilities and review the data/information for applicability. (11)

Response to Comment 88: Figures depicting sampling site locations are provided in the 2002 Integrated Report which is available on the Department's web page (http://www.state.nj.us/dep/) or from the Bureau of Water Quality Standards and Assessment, PO Box 409, Trenton, NJ 08625.

Comment 89: Pages 34-37, Sections 6.1.1 and 6.1.2, These sections as written are unclear. Section 6.1.2 presents the method for estimating the spatial extent of ASMN stations. The downstream limits on spatial extent seem to be incomplete. For example, for the discussion on "all Stations on a 3rd Order or Smaller River", why does the downstream spatial extent continue along the main stem to the next 2nd order stream? What happens if the next downstream tributary is another 3rd order stream? The same type of question applies to the discussions on "Land Use Indicator Station on a 4th Order or Larger River" and "Watershed Integrator Station on a 4th Order or Larger River." In addition, the presentation does not explain why these spatial extents are relevant, how they are used, or how they would be applied if the spatial extent (based on a water quality observation) is different from the spatial extent (based on a Land Use Indicator or Statewide Status Station). (11)

Response to Comment 89: Additional text has been added to clarify the spatial extents. In general, the spatial extent is terminated at the confluence of a tributary. In addition, lakes greater than 50 acres may have significantly different water quality above and below the lake, therefore, if a river reach is "monitored" the assessment continues as "estimated" above the lake. If the river reach is "estimated", the assessment ends at the lake. With this technique, the Department has the capability to apply assessment data to many uses including the ability to observe which waterbodies in the state meet designated uses, do not meet designated uses, or has insufficient data to make an assessment. The spatial extent will be modified and improved, as more data becomes available.

Comment 90: Page 35, Section 6.1.2, first line, The word "Chemical" should be replaced with the word "Stream" for consistency. (11)

Response to Comment 90: The Department agrees and has made the change.

Comment 91: Page 37, Section 6.3, the Department should further explain or provide an example related to the following sentence: "These waterbodies will then be subdivided into smaller areas by patterns of sample results." (11)

Response to Comment 91: The Department has added text and figures showing an example of this method to clarify the explanation. For example, a bay has 10 sampling sites located throughout the waterbody. If only two sites are not attaining and the remaining sites are attaining then the regional pattern in the bay is fully attaining. Isolated sites are defined as one or two sites surrounded by sites with different assessments that isolate the site or small pocket of sites. These isolated sites will not be assigned their own spatial extent instead the waterbody will represent the assessment results from the majority of the sampling sites (See Figure 1). If clusters of similar assessment results are identified then each cluster is assigned a spatial extent (See Figure 2).

Comment 92: Page 37, Section 6.3, Spatial Extent for Estuary Waters includes the following statement. "Open waterbodies with isolated sites in violation will not be assigned spatial extents instead the cluster of sites that most accurately represents the water quality pattern will be assigned the spatial extent of the waterbody." Allowing for the obvious correction to the punctuation (namely, the insertion of a "." after spatial extents), how are the "cluster of sites that most accurately represents the water quality pattern" to be determined? Is this a subjective

judgment or is it based upon a defined methodology that would yield a consistent result irrespective of the individual(s) who perform the analysis? (11)

Response to Comment 92: The Department has added text and figures showing an example of this method to clarify the explanation. This method relies on best professional judgement to determine spatial extents for estuary waters. The primary factors used to determine the spatial extent include number of sampling stations, location of sampling stations, assessment status of stations, and geography and hydrology of the waterbody.

Section 7

Comment 93: Section 7.1, Description of Category 4C: The commenter questions the use of the term "pollution" to address physical damage and habitat alteration to stream ecosystems. The word, "pollution," generally indicates "contamination of air, water or soil by discharge of harmful substances." Pollution is caused by the existence of pollutants above a threshold. The phrase "… and was solely attributed to pollution" is misleading even though "impoundments, flow alterations, and habitat degradation" are included in the accompanying Non Attainment definition. A better phrase might be "The cause of impairment was unknown, physical in nature, or not attributable to a particular chemical constituent." Much as the proposed definition for "Existing Water Quality" in the Watershed Rules made it clear that "existing" was not "current", the use of the water quality term "pollution" to mean something other than its normal usage will only confuse the public and the issue.(3)

Response to Comment 93: USEPA guidance requires a TMDL only when the cause of the impairment is a pollutant (USEPA. 2001. Memorandum from Robert H. Wayland III to EPA Regional Water Management Directors, Science and Technology Directors and State, Territory and Authorized Tribe Water Quality Program Directors. Re: 2002 Integrated Water Quality Monitoring and Assessment Report Guidance. November 19, 2001). If the impairment is caused by pollution and not a pollutant, the waterbody will be placed in Sublist 4. Pollutant is defined in the CWA as "spoil, solid waste, incinerator residue, sewerage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water". Pollution is defined as "the man-made or man-induced alteration of the chemical, physical, and radiological integrity of a waterbody". Determining that impairment is due to pollution and not a pollutant, allows the placement in Sublist 4. Listing in Sublist 4c means that a TMDL is not the appropriate means to restore water quality.

Comment 94: Section 7.1, Category 5: In the table block with Category 4b, is it correct to assume that Category 5 should be Category 5b? Regarding category 5c, it seems that there are two very different situations here. One is where the non-attainment is probably due to causes other than pollutants. The other is where the non-attainment has no known source. The first case does not require a TMDL, but still should be addressed through watershed management. The second case requires further investigation to determine a cause. Therefore, the two situations should not be contained in Sublist 5c. (3)

Comment 95: Page 46, Table 7.1, last "Non Attainment Listing Category". The Department should either delete Category 5c or remove the c from Category 5 because no subdivisions of the category have been previously defined. (11)

Response to Comments 94 and 95: The "c" was a typographical error and has been deleted. Waterbodies will be placed in Sublist 5 if the cause of the impairment is one or more pollutants or if the cause of the impairment is unknown.

Comment 96: Page 46, Section 7.2, the Department states that "Therefore, for the vast majority of impaired waters listed in the Integrated Report, the causes and sources indicated are the best estimation of staff based on a weight of evidence approach." The regulated community should have the opportunity to comment on the "weight of evidence approach" employed by Department staff since it is the basis for most impairment listings and to ensure it is consistent and not arbitrary and capricious in nature.(11)

Response to Comment 96: The Methods Document describes how the Department assesses water quality data to determine which waterbodies are impaired and must be reported in Sublist 5 consistent with Section 303(d). Both the Methods Document and Sublist 5 are subject to public comment as required by Section 303(d). The Department is required to include information on sources and causes of impairment as part of the 305(b) Report (also known as New Jersey's Water Quality Inventory). The requirements of the 305(b) Report for the year 2002 will be folded into the 2002 Integrated Report. Section 305(b) requirements are not subject to the public comment process. The Department may use antedotal data when available and best professional judgement to prepare the 305(b) report. However, this type of information is not used to list waterbodies on the Integrated List. Once a waterbody or segment is designated as impaired and listed on Sublist 5, a more thorough investigative study will be conducted to determine possible causes and sources of impairment. These investigations may include more intensive ambient water quality sampling, aquatic toxicity studies, sediment or fish tissue analysis and/or dilution calculations of known discharges. In some cases the determination of causes and sources may not be possible. The phrase "weight of evidence approach" may have been confusing and has been removed in the final Methods Document.

Comment 97: Pages 45-46, Section 7.1, Table 7.1, what is meant by spatial extent of AMNET monitoring site "results"? Are the results meant to be water quality measurements? If so, how would such measurements "consider the stream order of the reach"? If the results are not water quality measurements, what are they and how do they "consider the stream order of the reach"? The presentation is confusing. (11)

Response to Comment 97: Please see Response to Comment 86.

Comment 98: Page 47, Section 7.3.1B. The Commenter cannot find the QA/QC requirements referenced in this document-please clarify. (11)

Response to Comment 98: The QA/QC requirements referenced in Section 7.3.1B refer to the requirements outlined in Section 3.2 Quality Assurance of the Methods Document. The Department has added the phrase "identified in Section 3.2 of this Methods Document" to Section 7.3.1B for clarification.

Comment 99: Page 47, Section7.3.2 A**.**, The correct Section is 5.1.2 not 5.1.3. (11)

Response to Comment 99: The Department agrees and has made the change.

Comment 100: Page 47, Section 7.3.2.C., The Department should explain the basis for quarterly sampling in tidal rivers. The explanation of "Data Age" is unclear and suggests the following: Available data representative of present water quality and collected consistent with an approved QAPP. (11)

Response to Comment 100: See Response to Comment 73. Quarterly sampling when applied over several years provides the Department with data representative of water quality over the seasonal and tidal cycles. The Department assumes that the most recent five years of data will be representative of present water quality. All data must be collected consistent with an approved QAPP.

Comment 101: (7.0) Most of the present 303(d) list is due to moderately impaired RBP sites; these will now be characterized as Category 4, which do not require the development of a TMDL. This will put these sites on a several years to decades backburner, and effectively delist them. Wouldn't it make more sense to recognize the importance of stormwater volume and sedimentation of fines for all the common TMDL failures (fecal coliform, nutrients, heavy metals, and macroinvertebrates) in areas like WMA 12 that no longer have traditional pollution sources like sewer plants, whole developments of overflowing septic systems, etc. The creation of one 'multi media' TMDL that would reduce the paperwork of having multiple individual TMDLs is far superior to just delisting as many sites as you can in order to reduce the bureaucratic overburden of the process. (7)

Response to Comment 101: No AMNET sites have been placed on Sublist 4 and it is not clear from the comment why the commemter believes most of the AMNET listings will end up on List 4 (we assume he mean 4c: impairment due to pollution and not to a pollutant). The factors mentioned by the commenter, specifically stormwater volume and sedimentation, can be quantified and hence applied to a TMDL. For that reason, the Department does not believe that most AMNET locations will end up on sublist 4. Currently the Department does not have data to determine whether the impairment at AMNET sites is due to a pollutant(s) or to pollution. As a result, the impaired AMNET sites will remain on Sublist 5 until the cause of impairment can be determined.

Comment 102: (7.3). How will rain figure into delisting? Fecal coliform, nutrients and heavy metals are all resuspended from sediment during rain events, and generally exceed standards during rain events. Since nonpoint pollution figures so heavily in the development of 303(d) lists, you need to spell out how many samples and under what representative rain conditions need to be considered before a site can be delisted. For example, Coastal Cooperative Monitoring Program (CCMP) sampling is done every Monday; if it doesn't rain a lot on Sunday that year, your sampling average may be misleadingly low to declare the site eligible for delisting, especially if it is located by a stormwater outfall. (7)

Response to Comment 102: Sampling is carried out randomly. Although sampling is not specifically scheduled for rain events, the random nature of the sampling over a five year period provides for a mix of wet and dry weather samples.

Comment 103: Page 48, Section 7.3.7, Natural Causes: Change the sentence to, "Waters that exceed standards but drain wilderness or similar areas and it can be documented that there are no human contributions that could account for standard exceedence." (14)

Response to Comment 103: The Department feels that the definition of "Natural Causes" as delineated in Section 7.3.7 is appropriate and has not made the recommended change.

Section 8

Comment 104: Section 8.0 – Are there mechanisms for the public to negotiate an impaired waterbody's prioritization in the Category 5 List? How are priorities indicated? (2004 TMDL listing?) It is impossible to tell whether the 2004 TMDL list is a proper reflection of the priority criteria, or a reflection of expediency. The stakeholders of the Raritan Project are ready and motivated to begin the TMDL process. The Raritan Basin TMDL process has changed from a 2003 due date (EPA/NJDEP agreement) to an unknown due date other than for fecal coliform. Why? (3)

Response to Comment 104: The Department prioritized waterbodies and parameters in Sublist 5 based upon the nature of the pollutant of concern. Pollutants that related directly to human health issues ranked "high", while more conventional water quality parameters ranked "medium" and aquatic life considerations ranked "low." The Department believes that pollutants which acutely or chronically effect human health are of a higher priority than those which may alter aquatic life in perhaps an unknown cause and effect relationship. In terms of scheduling waterbody/pollutant segments for TMDL development, the Department considers other administrative factors such as available staff resources, coordination with other program activities, interstate efforts, complexity, model development needs, and timing with other TMDLs. The Department executed an MOA with EPA Region 2 to expedite the development of TMDLs for impaired waters by July 31, 2003. The Department identified stream segments impaired for fecal coliform and eutrophic lakes as a short-term priority. TMDLs being developed jointly through the Delaware Estuary Program and the NY/NJ Harbor Estuary Program were included in the MOA although the scheduled completion date was beyond July 31, 2003. The two-year schedule for TMDL development reflects those waterbody/pollutant combinations agreed to in the MOA and those already under development and anticipated to be completed in 2003 and 2004. The previous MOA did not identify waterbody segments or pollutants to be addressed. In addition to these waterbodies, the Department is working on additional TMDLs that are scheduled for completion after 2004. The new MOA better reflects the prioritization and scheduling factors described in Section 8 of the Methods Document. Additional TMDLs can be developed by third parties such as the stakeholders of the Raritan Project. Groups seeking to develop a third party TMDL must submit a proposal to the Department for approval prior to initiating any TMDL work. The proposal must document how the TMDL will be developed and how the public participation requirements will be achieved through the development process. Upon review and approval by the Department, the Department will propose the TMDL as an amendment to the appropriate Water Quality Management Plan.

Comment 105: Section 8.0 – Of the criteria for prioritization, which ones have the greatest weight? (3)

Comment 106: Page 49, Section 8.0, The Department should explain the process/approach employed with the listed 16 factors in ranking and prioritizing waterbodies for TMDL development. Are all factors considered equally or do some factors have greater weight? An example or two would be helpful in understanding the process employed by the Department. Please provide the weighting of these factors or the decision process in determining the scheduling of Assessment Units (AU) for TMDL development. The Department should inform the stakeholders of anticipated date for the prioritized list being available for public comment. (11,19)

Response to Comments 105 and 106: As explained in Response to Comment 104, the Department prioritized waterbodies and parameters in Sublist 5 based upon the nature of the pollutant of concern. The Department utilized the 16 administrative factors described in Section 8.0 to schedule waterbody/pollutant segments for TMDL development. The Department does not believe that a strict weighting scheme is an appropriate method for scheduling TMDLs. The Department considers these 16 administrative factors, as appropriate, to each waterbody/pollutant combination and based on the particular circumstances determines the appropriate TMDL scheduling. For example, fecal coliform impairments are ranked high due to their potential impact on human health. A significant number of the freshwater streams listed for fecal coliform impairments have been scheduled for TMDL development by July 31, 2003 in accordance with the MOA and the two year schedule. The Department evaluated the complexity of the impairments including potential sources, modeling and other data needs. Based on this assessment, the Department determined that the Department in 2003 could establish these TMDLs. Other stream segments listed for fecal coliform were not scheduled for completion in the next two years. Fecal coliform impairments for these waterbodies are ranked high but not scheduled in the next two years. The presence of Combined Sewer Overflows (CSOs), the time required to develop a model to reflect the hydrodynamic conditions, the time required to collect additional data to calibrate the model, and the fact that this TMDL needs to be developed as an interstate effort due to shared waters were considered in scheduling this TMDL. To accomplish this complex interstate TMDL, an extended time frame is necessary. In accordance with the MOA, this TMDL is to be established in 2006.

Comment 107: In accordance with the 2002 Integrated Report Guidance, dated November 19, 2001, the Department must provide an estimated schedule for establishing TMDLs for every pollutant on each waterbody in Sublist 5. This schedule must specify the month/year for all TMDLs which will be established in the first two years subsequent to the approved Integrated Report. (19).

Response to Comment 107: The Department believes that these concerns were addressed upon the re-proposal of Section 8.0 of the Methods Document (Cite 34 NJR 2868). Further, while the 2002 Integrated Report Guidance, dated November 19, 2001 indicates on page 7 that "This schedule must specify the month/year for all TMDLs which will be established prior to the next Integrated Report, and the year for all others", that same document states on page 3 that "This guidance does not, and cannot, change existing rules for listing and delisting". 40 CFR 130.7 (b)

(4) states, in part, "the priority ranking shall specifically include the identification of waters target for TMDL development in the next two years". Further, 40 CFR 130.7 (d) states "schedules for submission of TMDLs shall be determined by the Regional Administrator and the State." The Department believes that the 2002 Integrated Report and the Memorandum of Agreement (dated August 16, 2002) between the two agencies meets these requirements.

Comment 108: Page 49, Section 8.0, bullet 11, This factor should be changed to illustrate cooperation with other state (e.g., Pennsylvania Department of Environmental Protection, Delaware Department of Natural Resources and Environmental Control) and interstate agencies (e.g., Delaware River Basin Commission).(11)

Response to Comment 108: While the Department recognizes cooperation with other states and interstate agencies, the relationship with the State of New York is different in that some waters of the State of New Jersey flow into the State of New York and vice versa. That is not the case with either the Commonwealth of Pennsylvania or the State of Delaware, which share the Delaware as a natural boundary. That boundary area is managed by the Delaware River Basin Commission (DRBC), which is responsible for developing TMDLs in that area. DRBC works in cooperation with the three states in developing TMDLs in a timely fashion.

Section 9

Comment 109: Page 50, Section 9.0, Paragraph 2 states "the Integrated Report will include a comprehensive Monitoring and Assessment Plan that describes the approach to obtaining data…The 2002 Integrated Report will include a schedule (both long term and annually) for collecting data…". The Department should indicate to the stakeholders when this information will be available for review and comment.(11)

Response to Comment 109:. The comprehensive Monitoring and Assessment Plan is included in the 2002 305(b) report. The 305(b) report will be posted on the Department's web site. While the Department's Integrated List (specifically Sublist 5) required pursuant to Section 303(d), is subject to public comment, the Water Quality Inventory Report (which contains the Monitoring and Assessment Plan) is a final report required by Section 305(b) and is not subject to public comment.

Comment 110: Page 50, Section 9.0, last paragraph, last bullet, what advanced statistical techniques does the Department contemplate employing? (11)

Response to Comment 110: See Response to Comment 41. One of the methods, the Department is considering, is the probabilistic assessment methods employed by USEPA's EMAP program. Information regarding the program and the statistical methods used can be view at the EMAP website: www.epa.gov/emap/index.html. The Department intends to work with the US Geological Survey to refine these techniques so as to insure that the probabilistic methods are appropriately applied to our State with its relatively small size.

Section 10

Comment 111: Page 52, Section 10.0, The Department needs to provide a more in depth and clearer explanation of the methodology used to develop the 303(d) list.(11)

Response to Comment 111: The Department believes the 2002 Integrated Water Quality Monitoring and Assessment Methods Document provides an in depth and clear explanation of the methodology used to assess available data and develop the Integrated List. As explained in the Introduction of the Methods Document, Sublist 5 of the Integrated List represents the 303(d) list.

Comment 112: Page 52, Section 10.2, line 3, The commenter suggests that the Department publish this information on the "Main" Department Website so the stakeholders can more readily find it.(11)

Response to Comment 112: The Department agrees with this comment and will provide a link from the Department's website at www.state.nj.us/dep under dep.hot topics.

Comment 113: Page 52, Section 10.3, The comment period should be a minimum of 60 days to allow for a more thorough review and comment by the stakeholders. (11)

Response to Comment 113: The proposed 303(d) list (Sublist 5 of the Integrated List) is an amendment to the Statewide Water Quality Management Plan. In accordance with N.J.A.C. 7:15-6, the Department must provide a minimum comment period of 30 days. However, the Department may provide for longer comment periods. For the 2002 303(d) list, the Department provided 45 days on the initial public notice and another 30 days on the re-proposed list and sections 4.2 and 8 of the Methods Document. The Department believes the time provided allowed for adequate review and comment.

Section 11.0

Comment 114: Page 56, Section 11.0, USEPA. 2002 is not a complete reference. Appendix I appears to be an EPA memorandum dated November 19, 2001 that the Department has modified. For example, the Department has removed EPA's Diagram 1 and replaced it with Table 7.1 and deleted EPA's Appendix A and B, which are referenced in the text of EPA's memorandum. The commenter believes the Department should clarify this issue.(11)

Response to Comment 114: The Department agrees and has provided a complete reference and added the Appendices and Diagram 1 to Appendix I in the final document.

Appendix

Comment 115: References: Remove "United Nations" before USEPA publications. Also, there is a reference to USEPA 2002 without further information. (3)

Response to Comment 115: "USEPA 2002" and "United Nations" were typographical errors and have been removed.

Comment 116: ASMN appears with two different descriptions: Ambient Chemical Monitoring Network (page 35) and Ambient Stream Monitoring Network (page 13 – not defined and page 15 – first defined). ASMN should be defined at the first appearance on Page 13 and the reference

on page 35 should be changed. Add ASMN to Appendix V: List of Acronyms and Abbreviations. (3)

Response to Comment 116: ASMN is the abbreviation for the "Ambient Stream Monitoring Network". "Ambient Chemical Monitoring Network" (page 35) was a typographical error and has been corrected.

Comment 117: Appendix I, Table 7.1, The word "Chemical" should be replaced with the word "Stream" for consistency. (11)

Response to Comment 117: The Department agrees with the comment and has made the change.

Comment 118: Appendix II, un-numbered page 6, Nonpoint Source Assessment (319), How can this be a complete report if the Department is still looking for updated assessments and references?(11)

Response to Comment 118: All data and information received prior to development of the Integrated List was used. The reference for the 319 Report has been added to the text.

Comment 119: Appendix II, Table A1, page 1-# of Stations for metals, volatile organics & pesticides, How this can be a complete report if the Department is still trying to determine the number of stations used for these assessments? (11)

Response to Comment 119: The total number of stations for metals, volatile organics & pesticides was inadvertently omitted in the draft. The number of stations has been identified in the final report.

Comment 120: Appendix III, How this can be a complete report if the Department does not have a final Nutrient Criteria Plan. (11)

Comment 121: Appendix 3: Nutrient Criteria Plan: When will this be available for public comment? (14)

Response to Comments 120 and 121: The Department, unlike many states nationally, adopted numeric criteria for Phosphorus, reflecting work that indicated Phosphorus was the limiting nutrient in freshwaters. Recently, the Department has developed technical guidance for implementation of the phosphorus criteria for NJPDES permits. The Department expects to meet with the USEPA to discuss which complementary response parameters (for example - Chlorophyll A) should be added to the SWQS to more completely address nutrients. The nutrient criteria plan is expected to identify the complementary response parameters and establish a schedule for their incorporation into the SWQS. The Department expects to develop the nutrient criteria plan in cooperation with the USEPA in 2003. The public will have an opportunity to comment when the Department proposes revised criteria in the SWQS.

Comment 122: Appendix 5: List of Acronyms and Abbreviations: Add "AU" to the list. (14)

Comment 123: There are two "FW" acronyms. Change the acronyms to "FW 1" and "FW2." (14)

Response to Comments 122 and 123: The Department agrees and has made the changes.

Integrated List

Comment 124: A table linking the listed impaired stream segment to the RF3 (later NHD) stream segment code/identifier should be included as an Appendix to the Sublist 5 List. The stream segment identifier could also be added to the List as a column.(3)

Response to Comment 124: Although the suggestion has not been incorporated into the final document due to time constraints, the Department agrees with the suggestion and will develop such tables. As soon as the Department has finalized the Integrated List and it has been approved by USEPA, the Department will proceed with making additional information such as RF3 and maps available to the public.

Comment 125: In accordance with the Introduction in the Methods Document, "If a waterbody meets all applicable surface water quality standards except fecal Coliform, the waterbody will be included in Category 5." Seven Raritan Region (WMA 8, 9, and 10) Streams are listed for development of a fecal Coliform TMDL by 2004. Dawson's Brook at Ironia and Middle Brook at Burnt Mills appear on the Category 1 List. (3)

Response to Comment 125: Dawson's Brook and Middle Brook are both listed in Sublist 3, insufficient data. Their inclusion in Sublist 1 and on the TMDL Schedule were typographical errors.

Comment 126: The 1998 303(d) List shows non-attainment at Black Creek for total phosphorus and fecal coliform. NJDEP draft recommendations developed in 1999 proposed delisting for total phosphorus. In the draft 2002 Integrated Document, Black Creek does not appear to be shown on any List. Has the Black Creek, therefore, been delisted for total phosphorous? (1,2)

Response to Comment 126: Although Black Creek was omitted on the draft Integrated List, existing data is available for Black Creek. Black Creek is assessed as full attainment for total phosphorus and as non-attainment for fecal coliform. The Integrated List has been amended to include Black Creek on Sublist 5 for fecal coliform and Sublist 1 for total phosphorus.

Comment 127: 2002 Integrated List 3. This list should include the Delaware River/Estuary. (11)

Response to Comment 127: The Department has received the draft 2002 305(b) report from the Delaware River Basin Commission and has amended the Integrated List to include the assessments for the Delaware River/Estuary. The Department has prepared an errata sheet which identifies changes to the proposed Integrated List including the Delaware River and Estuary additions. The errata sheet is available on the web with the final Integrated List.

Comment 128: 2002 Integrated List 5, The Department has included segments on this list that are impaired based on either biological assessments or narrative use non-attainment criteria. The Department has indicated in the text of the methodology that in most cases it has not determined a specific "pollutant" these segments are impaired by. The Department further states that these segments will be listed in Category 5 and will include time for additional monitoring, prior to development of a TMDL, to identify the "pollutant" if one is the cause of the impairment or if not move the segment to Category 4c. Information denoting this action on the Table labeled "2002 Integrated List 5" is not seen. The Department needs to add this information to this table or, more appropriately, list these segments in Category 3 and on the table labeled "2002 Integrated List 3", until the additional monitoring is completed and a determination made as to whether or not the impairment is caused by a "pollutant" or "pollution".(11)

Response to Comment 128: Sublist 5 is a list of impaired waters based upon readily available information. The Department has applied a conservative approach in listing AMNET assessments on Sublist 5 rather than Sublist 3. The Department has listed AMNET sites on Sublist 3 when it was determined that the impairment may be questionable. See Response to Comment 17 and 54. The Department does not believe indicating the need to assess the cause of impairment (pollution vs. pollutants) would improve Sublist 5. Placement on Sublist 5 does not necessarily require TMDL development. The Department will assess whether the source of the impairment is a pollutant requiring a TMDL or if the cause is pollution. If the source of the impairment is a pollutant, a TMDL will be developed. If the source of the impairment is pollution, the Department will have the necessary information to support delisting and placement of the waterbody on Sublist 4c. Planned responses to 303(d) listings are delineated in the Methods Document.

Comment 129: Under the Metals Section of the 2004 TMDL List, the Site ID does not match for several listed segments on the Category 5 List and not all metals are always listed. For example, Manalapan Brook at Spotswood is listed for Lead and Zinc at Site ID 01405440 and not listed in the Category 5 List at that location. The Category 5 List indicates Manalapan Brook at Spotswood for Arsenic, Lead, Mercury and Zinc at station 9-MAN-2. Are these the same River segment? If it is, an identifier should be developed so that a segment can be followed from list to list (i.e. the RF3 stream code). (3)

Response to Comment 129: Site ID –01405440 and 9-MAN-2 are the same segment and the Integrated List has been amended to clarify this by including multiple identifiers for this waterbody and others as appropriate.

Comment 130: For the column "Previously listed on 1998 303(d) list", for WMA 11, AN0103 Airport Brook, nothing is filled in. However, AN0103 was listed as biologically moderately impaired on the 1998 303(d) list. This is also true for AN0111, 113, 114, 115, 116, 118; in fact all the invertebrate impaired sites from 1998. Why isn't this noted? (4)

Response to Comment 130: The Department acknowledges that several sites did not appear in the "Previously listed" column and in response has drafted a supplement to the 2002 Integrated List entitled "Comparison Document, Locations on the 2002 Integrated List of All Waterbodies Listed in New Jersey's 1998 List of Water Quality Limited Waters (Section 303(d))." As the

title indicates, this document lists all waters on the 1998 List and their current listing status in the 2002 Integrated List. The Comparison Document will be available on the DEP website

Comment 131: For site 01463620 Assunpink Creek, it is indicated that it was listed for Total Phosphorus in 1998. Site 01463620A- Assunpink Creek was also listed and now appears to be meeting the Phosphorus parameter. But site 01463620B- Assunpink Creek does not show up on any list available from the Department's website and it was listed in 1998 for metals. Please clarify. Similarly, site AN0110A - Shipetaukin Creek does not show up on any of the available lists although site AN0110 does.(4)

Response to Comment 131: The Assunpink sites were inadvertently omitted and have been added to Sublist 5 in the Integrated List. There were two Shipetauken Creek AMNET sites listed in 1998. On the 2002 Integrated List, Shipetauken Creek (Rt. 583) is listed in Sublist 5 (AN0111) and Shipetauken Creek ((Van Kirk Rd.) is listed in Sublist 3 (AN0110).

Comment 132: "Kakeout (Stonehouse) Brook" This waterbody has been listed as impaired for temperature based on data provided by the commenter's group. However, this waterway is currently classified as "non-trout" under the Surface Water Quality Standards and the temperatures we recorded there do not show violation of criteria for non-trout waters. Therefore we believe this listing is in error. (8)

Comment 133: "Pacock River". We believe this listing refers to Pacock Brook. Second, as is the case with Kakeout Brook, this waterway is classified as "non-trout" and temperatures recorded there do not exceed non-trout criteria. We believe this listing is also in error. (8)

Response to Comments 132 and 133: The Department agrees with the comments. The Department has amended the Integrated List and has included Kakeout Brook and Pacock River in Sublist 1 – full attainment for temperature.

Comment 134: "Pequannock River above Pacock". While this segment of the Pequannock River is classified as FW2-TP(C1) and the temperatures recorded there exceed the established criteria, we believe these elevated temperatures are due to temporary localized conditions. Extensive beaver activity immediately above, below and around this site, including removal of bankside trees and bushes and a series of small dams have caused pooling and warming of this river segment, aggravated by the small size of the Pequannock in this headwater area. This is confirmed by data the commenters recorded in 1998 showing much lower temperatures in an area 2 miles downriver from this site where beavers were absent and the tree/shrub canopy was intact. A depiction of this data in graph form was provided by the commenter. In addition, a small concrete dam upriver from the impaired site may also elevate water temperatures. While improvement in river temperatures at this listed site could be achieved through reforestation, removal of dams and control of beaver colonies, we believe this impairment is ill suited to TMDL development. Therefore we recommend this listing be moved to Sublist 4, subcategory C as a "local habitat modification." These comments also encompass the listing for "Pequannock River at Rt. 515 in Hardyston Twp" since the AMNET site where this macroinvertebrate impairment was recorded is in the same general vicinity. (8)

Response to Comment 134: The Department agrees with the comment and has amended the Integrated List and placed the "Pequannock River above Pacock" in Sublist 4.

Comment 135: "Macopin River", "Macopin River at Macopin Intake", "Pequannock River at Rt. 23 (above the reservoir) in West Milford Twp", "Pequannock River above Clinton", "Pequannock River above Macopin", "Pequannock River At Macopin Intake Dam", "Pequannock River below Clinton", "Pequannock River below Pacock". There has been some discussion as to whether these sites are more appropriately listed under Category 4. The commenter's main concern is seeing these impairments addressed in a timely manner, principally through requirements for improved flow management and better manipulation of flows within and below the City of Newark's reservoir system. The commenters are convinced that temperature impairment in these sites is almost entirely due to inadequate flow management. The improvement possible through enhanced flow regimes has been amply demonstrated in recent years by the reduction in temperatures resulting from increased flows below the Oak Ridge Reservoir. The commenter is pleased with the Department's recognition of the need for enhanced flows and believes its concerns will be adequately addressed through development and implementation of a comprehensive flow management plan. For this reason the commenter does not oppose transferring these sites to Category 4. (8)

Response to Comment 135: Waterbodies classified as Non-Attainment due to impairment or threat of impairment by a pollutant such as temperature may be reclassified to Sublist 4 without completing a TMDL if other enforceable pollution control requirements are reasonably expected to result in the attainment of the water quality standard in the near future.

The Department agrees that temperature impairment in these sites may be due to inadequate flow management and that a TMDL may not be the appropriate action. The Department is retaining these waterbodies in Sublist 5 at this time. Once specific enforceable management practices are in place as recommended by EPA guidance, the Department will be able to move these segments to Sublist 4.

Comment 136: "Pequannock River – Butler". It could be assumed that the same enhanced flows that would address Pequannock River impairment at the Macopin site under a Category 4 listing would reduce or even eliminate impairment at this site also. However, that assumption ignores other contributing factors in this lower portion of the watershed. Point and non-point sources of thermal degradation, including the impacts of stormwater and several NJPDES permitted discharges, must also be considered. For this reason, this site should be retained in Category 5. (8)

Response to Comment 136: The Department agrees with the comment and has retained the Pequannock River at Butler in Sublist 5.

Comment 137: Data submitted by the Monmouth County Health Department is referred to in the Data Source column as "Monmouth Co.". It should be listed as "Monmouth County Health Department" and/or abbreviated "MCHD". (9)

Response to Comment 137: The table has been changed to "Monmouth County Health Department" as suggested.

Comment 138: It would be helpful if the lists were organized by subwatersheds within each WMA rather than alphabetically. Also inserting a "subwatershed #" column between the "WMA" column and the "Station/Name/Waterbody" column would be helpful. (9)

Response to Comment 138: The Department agrees that there are many ways to display the data. The Department felt that displaying the information by WMA and then alphabetically enabled the general public who may not know subwatershed designations to access the information easily.

Comment 139: The following comments refer to the Integrated List Tables:

1. In most cases stream names should not be possessive for example, Lafetras Brook not Lafetra's, Lanes Creek not Lane's and Troutmans Creek not Troutman's.
2. In the "Station Name/Waterbody" column the words "at", "in", "of" and "near" should not be capitalized.
3. Township should be consistently abbreviated Twp. throughout the document.
4. Several listings need better descriptions for example, "Poplar Brook at Deal" and "Municipal Yacht Basin".
5. A number of stream names in the document are spelled incorrectly. The WMA12 portion of the 2002 Integrated List spreadsheet is attached with incorrect listings circled.
6. Three listings, as indicated on the attached spreadsheet, are not in WMA12. (McGolliard Brook, Lupattatong Creek, and Weemaconk Creek)
7. On Integrated List 5, Spring Lake is listed twice as WMA 12, 20. Please clarify.
8. Most of the cells in the "Previously listed on 1998 303(d)" column are blank, but many of the listings where on the 1998 303(d) list.
9. In the final document a map should be provided for each Category.
10. A contact person(s) should be listed for more information. (9)

Response to Comment 139: The Department has corrected problems identified by commenters in the final version of the 2002 Integrated List. This includes name changes, spelling corrections, deleting duplicative listings, merging duplicative sampling locations, and adding information in the "previously listed" column. The Department has also amended the placement of waterbodies on the sublists as noted throughout this document such as the mercury fish advisories. The Department acknowledges the difficulty in using the information in the "Previously listed" column to track waters previously listed in the 1998 303(d) List and in response has drafted a supplement to the 2002 Integrated List entitled "Comparison Document, Locations on the 2002 Integrated List of All Waterbodies Listed in New Jersey's 1998 List of Water Quality Limited Waters [Section 303(d)]." As the title indicates, this document lists all waters on the 1998 List and their current listing status in the 2002 Integrated List. The final document will contain maps for each Sublist. Dr. Judy Louis was identified as the contact person in the public notice.

Comment 140: Similar to the decision made by the Department to recognize that AMNET sites AN0765 and AN0766 are actually Pinelands streams with low pH, the commenter recommends

removal of both the AMNET site located at Old Robbins Branch at the Causeway in Dennis Township (AN0769) and the NJDEP/USGS site located at "Dennis Creek Trib 2 at Dennisville" (Site ID 01411428) from the NJDEP's 2000 Integrated List 5, which now represents the 303(d) List, and including these sites on Integrated List 3, as a Category 3 waterbody. AMNET site AN0769 has consistently displayed a low pH of 4.0 to 4.5 for water quality samples between January and April of 2002. The low pH levels at Site ID 01411428 reported from NJDEP/USGS data would also be consistent with results anticipated from a Pinelands stream.

As further support for the recommendation to reclassify AMNET Site AN0769 (Old Robbins Branch at Causeway in Dennis Township) to Category 3 status, the TAC notes that the Department itself has listed "Old Robbins Branch at North Dennis" (Site ID 1411440) on the Department's proposed 2002 Integrated List 1 (the highest water quality classification). Since these sites are in close proximity (approximately ½ mile apart) and both sites are located within the Belleplain State Forest, the TAC believes that reclassifying Site AN0769 to Category 3 status, to enable further opportunity for assessment of the water quality at this location, is clearly warranted in light of this apparent inconsistency. (10)

Response to Comment 140: The Department placed AMNET sites located within the Pinelands in Sublist 3, using the border of the area under the jurisdiction of the New Jersey Pinelands Commission. The AMNET sites identified in the comment are located outside of the designated Pinelands boundary. However, the Department does recognize that there are sites located outside the jurisdiction of the New Jersey Pinelands Commission with water quality and aquatic life representative of natural pinelands conditions (such as AN0769 mentioned in the comment) which were included on Sublist 5. The Department plans to work with the Pinelands Commission to redefine the boundary conditions and modify the AMNET protocols to appropriately assess aquatic life use impairments in pinelands waters.

Comment 141: The commenter recommends that AMNET site AN0770, which is located at Green Creek at Route 47 in Middle Township, also be placed in Category 3 status, rather than including this waterbody on Integrated List 5 (the 303(d) List) as proposed by the Department, since this site is subject to tidal influences as indicated by the high salinity readings which were recorded at this site by the CMCHD (as high as 18.8 ppt on April 23, 2002). Elevated readings were also recorded at this site for conductivity, TDS, hardness and chlorides. Such results clearly indicate that the macroinvertebrate analysis utilized by the Department is inappropriate for determining the condition/health of this waterbody. (10)

Response to Comment 141: AMNET sites should be located above the head of tide and not in saline waters. According to Department records, AN0770 is not at or below the head of tide. It is possible there may be flaws in coverages and/or the extended drought may have resulted in an upstream migration of the salt lines in certain rivers. This site has been listed on Sublist 5 and ranked low priority for TMDL development. The Department is looking at the appropriateness of several monitoring site locations at the heads of tide and impacted by drought and will re-list waters as determined appropriate in future Integrated Listings.

Comment 142: Although AMNET site AN0767 does not appear to be listed under any of the categories included in the Department's proposed 2002 Integrated List, since this site was previously identified by the Department as severely impaired, and included on the 1998 303(d)

List, the commenter recommends that this waterbody be reclassified to Category 3 status since this site also appears to be subject to tidal influences as indicated by the high salinity readings which were recorded by the Health Department (as high as 10.2 ppt on April 23, 2002), and the somewhat elevated readings for the other test parameters referred to in Paragraph B above. It should be noted that this particular site is located immediately downstream of a freshwater impoundment which could explain the absence of elevated salinity and other readings during certain sampling periods (i.e., samples taken during low or outgoing tide conditions). It should also be noted that a member of the commenter observed a large minnow population at this site during one of the sampling periods earlier this year. (10)

Response to Comment 142: As indicated in Response to comment 141, AMNET sites should be located above the head of tide and not in saline waters. Site AN0767 was found to be inappropriately located within a tidal reach and is no longer assessed in the revised Integrated List. The waterbody in question will be assessed when biological assessment methods, appropriate for tidal waters in New Jersey, are developed.

Comment 143: The Department has identified Fishing Creek at Route 47 in Middle Township (AMNET Site AN0771) as impaired based upon what we understand was a single macroinvertebrate analysis performed by the Department of a sample taken at this location. Contrary to this conclusion, as indicated in the summary of the water quality sampling analyses performed by the Cape May County Health Department (CMCHD), the pH, dissolved oxygen and other parameters tested by CMCHD indicate that this stream is a relatively healthy waterbody. In addition, it should be recognized that this sampling location is relatively remote and not subject to any typical or recognized sources of contamination. Furthermore, the Department itself has listed a site at "Fishing Creek at Rio Grande" (Site ID 01411400), which is either the same site as AMNET site AN0771 or in close proximity to this AMNET site, on the Department's proposed 2002 Integrated List 1 (the highest water quality classification), indicating that water quality standards are being attained; some or all designated uses are being achieved; and, no use is being threatened. In light of these inconsistencies, the commenter recommends reclassifying AMNET Site AN0771 to Category 3 status pending the results of further study. (10)

Response to Comment 143: The site, AN0771 was found to be severely impaired. As indicated in response to comment 17, AMNET sites located below impoundments that are assessed as moderately impaired were placed in Sublist 3 based upon an interagency developed protocol, whereas such sites assessed a severely impaired will go in Sublist 5. Although chemical monitoring at Site # 01411400 shows good overall water quality (note: this is the same location as AN0771), factors that can impair the benthic community such as flow alterations or the presence of toxic substances do not always show up in conventional chemical analyses. There is the possibility that AN0771 represents a unique community that is natural (and not anthropogenically impaired) and perhaps should not be assessed using current methods, and this will be reviewed prior to any attempt at remediating the site.

Comment 144: Included on the proposed 2002 Integrated List 5 (i.e., the 303(d) List) are Savages Run in Belleplain State Forest and West Creek at Leesburg (Site ID Nos. 01411441 and 01411444, respectively), indicating non-attainment as a result of high fecal coliform readings. Given the remote nature of these areas, the commenter is concerned that including

these locations on the 303(d) List, with the resulting requirement for the development of a TMDL, is inappropriate pending further study to determine whether the origin of the fecal coliform readings are human or animal in nature. Therefore, it is recommended that these two additional sites/waterbodies be reclassified to Category 3 status pending further study. (10)

Response to Comment 144: The Department agrees that there are locations which are assessed as "impaired" but may in fact reflect natural conditions. Currently, the Department is taking a conservative approach and listing these in Sublist 5 and will investigate the sites, including those identified by the commenter, prior to a TMDL to determine if the locations are truly impaired by anthropogenic sources.

Comment 145: There are many locations listed on the Department's proposed 2002 Integrated List No. 5 (proposed 303(d) List) for non-attainment due to shellfishing restrictions. These listings are identified as being based upon the Department's Shellfish Monitoring Program. The Department's Bureau of Shellfisheries takes a conservative/precautionary approach to approving areas for shellfish harvesting. For example: certain areas are closed as a precautionary measure because they have a recognized potential to contaminate shellfish areas (example: closure areas around wastewater treatment facility outfalls); other shellfish areas are closed because they have been identified by the Bureau as potential problem areas (example: waterways in the vicinity of marinas); still other areas are seasonally closed to shellfishing due to increased usage or increased likelihood of contamination during certain times of the year; and some areas are closed in response to an event which has resulted in elevated fecal and/or total coliform readings (example: following a sewage overflow or significant stormwater event). As a result, it appears that several areas which are closed to shellfishing will remain closed (either year-round or seasonally) simply as a precautionary measure regardless of any improvements that are made to water quality. Although the commenter is generally supportive of this practice, they are concerned that several of the areas which are listed for inclusion on the 303(d) List because of shellfish restrictions will now be required to undergo development of TMDL's while, at the same time, it would be totally unrealistic to expect that they would ever be open to shellfishing (example: the Cape May Canal, Cape May Channel, Cape May Harbor, Ottens Basin, etc.) In order to address this potential problem, the commenter suggests that the pollutant of concern (i.e., fecal coliform at the applicable standard for the intended use) be utilized to determine 303(d) listing and to enable the development of an appropriate TMDL, if necessary. (10)

Response to Comment 145: The Department agrees with the comment and refers the commenter to Section 5.5 of the Methods Document which states that waterbodies closed to shellfishing for administrative purposes will not be listed in Sublist 5 if surface water quality data demonstrating compliance with the SWQSs is available. If there is no available water quality data to determine compliance/noncompliance, then the waterbody is classified as unassessed and appears in Sublist 3. The Department has assessed administratively closed areas around sewage treatment plant outfalls for the 2002 Integrated List. Other areas administratively closed such as the Cape May Canal and areas around marinas will be reassessed during the next listing cycle.

Comment 146: The Wanaque River at Wanaque, Site ID 01387000 is listed on Category 5 for dissolved oxygen, phosphorus and fecal coliform. During the summer 2001, this site was part of a comprehensive water quality study. The results of this study indicate compliance with all

SWQSs. This study was forwarded to the Department on February 13, 2002. The commenter requests that this site be removed from Category 5. (18)

Response to Comment 146: On May 21, 2001, the Department issued a public notice requesting the submittal of data which could be useful in the development of the 2002 List of Impaired Waterbodies. Data was accepted for a six month period prior to commencing development of the 2002 Integrated List. As stated in the public notice (33 N.J.R. 1794(a); May 21, 2001), data received after the six month period (5/21/01 to 11/20/01) may be considered for subsequent Water Quality Limited Segments Lists and/or other Department assessments such as Water Quality Inventory Reports. The Department will review the data submitted and, if appropriate, will modify the listings during the next listing cycle. This data will also be used in the TMDL process.

Comment 147: The East Branch Bass River near New Gretna (1410150) should be listed as either Category 1 or Category 2. This site has low pH and concentrations of dissolved calcium and magnesium. (17)

Response to Comment 147: This site was listed in 1998 for violations of total dissolved solids. The Department does not have more current data available to reassess this site. Therefore, the site was carried over as impaired to the 2002 List and appears on Sublist 5. Its impaired status will be reevaluated upon receipt/development of new data. This location is a continuously monitored location and new data will be evaluated for the 2004 Integrated Listing.

Comment 148: The surface water chemistry of typical undisturbed Pinelands streams should be used as the standard by which other Pinelands streams are assessed for water quality impairments. Greater emphasis should also be placed on the use of pH, nitrate-nitrogen, calcium, magnesium, dissolved solids and specific conductance when considering general stream health. (17)

Response to Comment 148: In developing appropriate benthic macroinvertebrate indicators for Pinelands waters, the Department has work closely with the Pinelands Commission to define appropriate background conditions using the indicators described by the commenter. With regard to the stream chemistry sites, the criteria against which the data are compared are delineated in the Surface Water Quality Standards and are applied based upon the stream classification (PL vs. FW) assigned to the streams. The Department recognizes the limitations of using the SWQS alone in assessing PL waters and will be reviewing its method of assessing PL waters as part of the next Integrated List. Any proposed methods will be subject to public review.

Comment 149: The commenter agrees with the Department's listing of the listed waterbodies on either Category 1 or Category 2. These streams/rivers should be used as a reference for the purposes of comparing surface water quality of undisturbed streams in the Pinelands. These waterbodies include the following: Papoose Branch (USGS Station No.1409960), Tulpehocken Creek (1409780), Skit Branch (1409439), Oswego River (1410000), West Branch Wading River at Chatsworth (01409690), West Branch Wading River at Jenkins (01409750), West Branch at Maxwell (01409815) and McDonalds Branch (1466500). (17)

Response to Comment 149: The Department acknowledges the commenter's support of these listings.

Comment 150: A Stream Intensive Survey was conducted on the Musconetcong River by Najarian Associates in the early 1990's. The final report was entitled, "Impact Analysis of a Wastewater Discharge on the Water Quality of the Upper Musconetcong River", dated February 1993. This report determined that data collected at the Lockwood area of the Musconetcong River showed that current water quality at the Lockwood Station is in compliance with the State total phosphorus standard of 0.1 mg/l approximately 90% of the time. (13)

Response to Comment 150: The Department reviewed the data provided. Using the most recent 5 years of data as outlined in the Methods Document, the phosphorus criteria was exceeded in greater than 10% of the samples. The Department believes that the assessment is correct and Sublist 5 is the correct sublist.

Comment 151: Category 5 includes "eutrophic status" as a non-attaining parameter for a few Pinelands lakes, including Harrisville Pond and Absegami Lake. It appears that the classifications are based on the Department's Clean Lakes Program. Apparently, the inclusion of Harrisville and Absegami is based on recreational criteria which address the presence of extensive beds of littoral vegetation. Dense aquatic macrophyte beds are not unusual in shallow Pinelands streams. According to the commenter's data, nutrients in both lakes are low (although nitrite + nitrate-nitrogen and total-P are detectable at the outflow of Harrisville Lake). Regarding secchi disk transparency, in stained Pinelands waters secchi depth is probably an indicator of tea-colored water due to DOC rather than phytoplankton abundance. The commenter suggests that the Department rely on water-quality parameters, rather than macrophyte beds, to determine if Pinelands lakes are eutrophic. (15)

Response to Comment 151: The status of lakes use impairment in this situation (section 5.3.1 of Methods Document) is based upon use impairment as reflected in the public's submittal of lakes to the Clean Lakes Program as candidates for restorations grants. The extensive macrophyte coverage was regarded by the local public as an impediment to full use attainment. If it is determined that this conditions represents a natural condition and not one brought about by pollution, then the lake(s) in question will be removed from Sublist 5. The Department will determine if the lakes in question are still use impaired before the next listing cycle.

Comment 152: Category 5 includes some Pinelands sites in the Mullica Basin that do not attain the pH parameter. Most of the sites listed clearly exceed the Department's Surface Water Quality Standards (SWQS) range of 3.5 - 5.5. However, according to the USGS/Pinelands Commission data, some appear to be only marginal. For instance, the Mullica River near Batsto (Mullica River at Constable Bridge) has a median pH of 5.0, Batsto at Hampton Furnace has a median pH of 5.2 and Batsto at Quaker Bridge has a median pH of 5.4-all within the acceptable range. The methodology used by the Department to determine whether a site is placed on List 5 for non-attainment of pH, as described in the proposed 2002 *Integrated Water Quality Monitoring and Assessment Methods Document,* is based on more than 10% of the samples at a site exceeding the SWQS for pH. However, Commission scientists have found that median pH values are good predictors of both biological conditions and levels of watershed disturbance:

biological conditions and communities begin to shift when the median pH exceeds 5.5. The commenter recommends that TMDL development not be required for these sites which are marginal based on median pH values. (15)

Response to Comment 152: New Jersey Surface Water Quality Standards criteria for pH in PL waters are expressed in terms of a range of values not to be exceeded and not as an expression of central tendency such as in means or medians. The allowance of a 10% margin is based upon USEPA's guidance for water quality assessments for use in 305(b) reporting. As stated previously in the Department's response to comment 149; the Department recognizes the limitations of using the SWQS alone in assessing PL waters and will be reviewing its method of assessing PL waters as part of the next Integrated List. Any proposed methods will be subject to public review.

Comment 153: Several of the sites attributed to "NJDEP/USGS Data" sources should actually be attributed to "USGS/Pinelands Commission Data" sources. Through agreements with the Pinelands Commission, the USGS collected water-quality data at 18 Mullica River Basin sites from October 1995 through September 1998. USGS and the Department independently collected water-quality data at eight additional sites in WMA 14. The commenter recommends that this information be updated in the final Integrated List. (15)

Response to Comment 153: The Department agrees and has made the changes.

Comment 154: 12 other sites in WMA 14 on Integrated List 5 are listed as not attaining parameters for dissolved oxygen or shellfish. These sites all fall outside of the Pinelands Area and therefore outside of the scope of the Commission's Mullica River Basin study. The commenter would like to request a map and GIS coverage of the precise locations of these monitoring stations in the coastal zone so that they can integrate this information into their planning process for the Mullica Watershed. (15)

Response to Comment 154: As indicated in Response to Comment 15, the GIS coverages will be posted on the Department's website.

Comment 155: Wanaque River at Highland Ave at Wanaque NJ and USGS site #01387041 - This portion of the Wanaque River is classified as FW2-TM in the Surface Water Quality Standards. Requirements under these standards include a temperature ceiling of 20 degrees centigrade (C) and a 24-hour minimum dissolved oxygen level of 6.0. In the data for this site the commenter found a reading for temperature on August 12, 1998 of 21.5 C. This temperature is in violation of the SWQS criteria. In addition, the commenter indicates that this recording occurred at 10:30 AM on the date in question. It is well known that river-stream temperatures generally reach their highest level in late afternoon and early evening. Therefore it is likely that the actual maximum temperature on this date was considerably higher. This also leads the commenter to believe that a temperature recording taken on September 23, 1998 of 18.5 C at 10:05 AM probably indicates another instance of noncompliance. Unfortunately analysis is hampered by the fact that little data exists for this waterway. Typically the highest river temperatures will be experienced in July, August and September. At this site there were only 2 recordings in these months in recent years. Considering this lack of data, the commenter believes even a single

recording in excess of the SWQS criteria is significant. The commenter asserts that dissolved oxygen levels and water temperature are closely linked and notes that the DO level on August 12, 1998 was 6.5 and was 6.8 on September 23, 1998. These levels are barely above minimum standards. For these reasons we recommend that this segment of the Wanaque River be listed, at a minimum, under category 3, and that the Department expand the intensity of monitoring for this waterway. (16)

Response to Comment 155: The Department's data does not support placing the waterbody on Sublist 3. The Department is aware that temperature data as presently collected may be insufficient to capture diurnal temperature fluctuations. A similar issue was raised in the Pequannock watershed where a local watershed group conducted a study to collect the additional data needed to assess diurnal temperature fluctuations. The data provided by the watershed group was used to supplement the Department's data which resulted in listing several waterbodies in the Pequannock watershed as "unattaining". The Department will be identifying other areas throughout the State, such as Wanaque, where additional seasonal diurnal monitoring is needed to adequately assess temperature.

Comments from the Reproposal - 2002 Integrated List of Waterbodies August 5, 2002 Public Notice

Comment 156: As explained in Section 2 of the Comparison Document included with the Department's Reproposal of the 2002 Integrated Waterbodies List and Methods Document (Reproposal), there are several categories of "unique sites" which, if used for an AMNET site, should be initially listed as Category 3 (areas where further study is required to determine compliance), as opposed to being listed as an Impaired Waterbody under the Category 5 sublist. Small streams which discharge to an AMNET site with a catchment or drainage area of less than six square miles represent one of the categories of "unique sites" described in the above-referenced Comparison Document. Three (3) AMNET sites are located at the downstream terminus of a drainage area which is less than 6 square miles. Specifically, the commenter calls the Department's attention to AMNET site AN0769, which receives flow from an estimated maximum drainage area of approximately 3.3 square miles and AMNET sites AN0770 and AN0771, which have estimated maximum drainage areas of 2.7 square miles and 2.6 square miles, respectively. The Department should reclassify these AMNET sites as Category 3, consistent with the criteria set forth in the Department's proposed 2002 Integrated Water Quality Monitoring and Assessment Methods Document. (10)

Response to Comment 156: The Department agrees with the comment and has moved AN0769 and AN0770 from Sublist 5 to Sublist 3. AN0771 is already on Sublist 3 for insufficient data.

Comment 157: The Department should reevaluate the previous Category 5 classification proposed for AMNET sites AN0767 and AN0768. As reflected on aerial photography supplied by the commenter with the sampling sites located by GIS, it is evident that these AMNET sites are located immediately downstream of the overflow from two lakes described by the Department as "Dennis Creek Below Dennisville Lake" and "Ludlums Pond Outlet", respectively. (10)

Response to Comment 157: The assessment methodology for macroinvertebrates applies only to non-tidal rivers. AN0767 and AN0768, in addition to being located at the outfall of a lake, are located in tidal waters and therefore have been placed in Sublist 3, insufficient data.

Comment 158: Apparently, the Department has continued to list "Dennis Creek Tributary No. 2 to Dennisville" (Site No. 01411428) in Category 5 as non-attainment for pH. Therefore, the commenter again requests that the Department reconsider its Category 5 classification for this waterbody, since this sampling site appears to be at, or immediately adjacent to, the border of the Pinelands Protection Area within this section of Dennis Township. As a result, the tributary drainage area to this sampling site can only originate within the Pinelands Protection Area. Therefore, in accordance with the Department's proposed Methods Document, the commenter believes that the Department should classify site No. 01411428 as receiving flow from a Pinelands Stream and evaluate this waterbody accordingly. (10)

Response to Comment 158: See Response to Comment 139.

Comment 159: In the Comparison Document issued with the Reproposal, the Department notes several sampling sites in the Atlantic Ocean which were previously listed on the 1998 303(d) list as a result of restrictions on shellfish harvesting. These same sites (A74A, A77B, A81B, A85A2, A87A, A93A2, A101A, A105A2 and A110B) are now also identified as not attaining water quality standards on the proposed 2002 List as a result of low dissolved oxygen levels. The commenter would like to know the location of each of these sites and the dates and frequency when samples collected at these sites indicated unusually low dissolved oxygen levels. (10)

Response to Comment 159: Samples were collected quarterly (seasonally) between 1997 and 2001, inclusive. The locations of the stations listed in the comment are in the Atlantic ocean, (unless otherwise noted) east by south east from the following locations:
A74A: 0.5 miles off Absecon Inlet
A77B: approximately 2 miles off Atlantic City
A81B: approximately 2 miles off Great Egg Harbor Inlet
A85A2 and A87A: 1.3 miles and 0.5 miles (respectively) off Corsons Inlet
A93A2: approximately 1 mile off Townsends Inlet
A101A: 0.5 miles off North Wildwood
A105A2: approximately 1.5 miles off the east side of Cape May Point
A110B: approximately 3/4 mile due south of the tip of Cape May Point

Full details regarding this information can be found in the report entitled “New Jersey Ambient Monitoring Program Report on Marine and Coastal Water Quality, 1993- 1997” available from the Department’s Bureau of Marine Water Monitoring. PO Box 405, Stoney Hill Road, Leeds Point, NJ 08220 or on the web at http://www.state.nj.us/dep/wmm/bmw/Reports/estmon-99.PDF

Comment 160: The Department failed to set forth any basis for its re-proposal. It did not identify the specific comments to which it is responding or the "additional information" it received. The commenter also objects to the Department's decision not to respond to the universe of comments received on the remaining sections of the List and Methodology. The Department

should address the issues raised in its prior comments before finalizing the List and Methodology. (11)

Response to Comment 160: After reviewing comments received on the Integrated List, the Department determined that substantial changes to the List were necessary. In order to allow for public comment on the changes and still meet USEPA's deadline of October 1, 2002 for the final Integrated List, the Department immediately re-proposed the amended list. All comments received on the initial and subsequent proposal are being addressed in this document.

Comment 161: Prior to establishing regulations and policies, which will have substantial impact on the process for achieving the State's goal of fishable and swimmable water as well as economic impact on the regulated community, the Department must conduct the requisite analyses and provide clear and definite statements of intent or guidance. Absent such scientifically defensible bases and clear regulatory guidance, these Re-Proposed Documents do not constitute adequate notice. (11)

Response to Comment 161: The Integrated List is a technical assessment of the waters of the State to determine if existing water quality meets surface water quality standards and whether designated uses are achieved. The Department utilizes its existing regulatory authority such as NJPDES (N.J.A.C. 7:14A) to implement the measures necessary to restore, maintain and protect water quality. Actions imposed to achieve these goals are subject to public comment.

Comment 162: The Methodology should include more specific information on the types, quality, and quantity of data necessary to determine whether New Jersey waters are meeting water quality standards. (11)

Response to Comment 162: The Department believes it has adequately addressed these topics in the Methods Document.

Comment 163: The Methodology should better explain how the assembled data and information will be evaluated to make impairment determinations. For example, the Methodology generally requires additional monitoring where available data are more than five years old, while allowing such data to be used in certain instances. The Department should provide specific conditions for the use of older data on a case-by-case basis; for example, older data could be used if conditions in the water body have not changed, or if the older data are used in conjunction with newer data to demonstrate water quality trends where appropriate analytical methods are used and results can easily be compared with more recent data. (11)

Response to Comment 163: It is not possible to foresee and take into account every data scenario. The Department has addressed all the data scenarios which it had encountered in assessing its own data for the 2002 Integrated List in the Methods Document. The Department also recognizes that outside groups may have data that does not fully comply with the methods described in the Methods Document. However, in many circumstances, this data is still relevant and useful in assessing water quality. The Department intends to describe the rationale for using any datasets determined to be appropriate on a case-by-case basis in the Integrated Report. The Department agrees with the examples outlined for using older data and has added "for example,

older data could be used if conditions in the water body have not changed, or if the older data are used in conjunction with newer data to demonstrate water quality trends where appropriate analytical methods are used and results can easily be compared with more recent data" to Table 4.1 to clarify the Department's intentions.

Comment 164: The commenter recommends that the Department establish guidelines, which will result in the collection of ambient samples considered to be sufficiently representative of actual water quality. Such requirements should include, at minimum, the following concepts:

- Appropriate requirements should be defined for acceptable depth of water quality measurements, determining mixed surface layer, defining the extent of tidal influence, and assessing ground water/surface water interface.
- Samples from mixing zones generally should not be included as part of the data set.
- Multiple depth samples taken at a single location in a lake less than seven days apart should be aggregated and used as a single value. (11)

Response to Comment 164: The Integrated Methodology requires sampling be carried out in accordance with the Department's Sampling Manual which discusses the proper sampling location. The Department has added the sentence "Sampling stations must be outside of the mixing zone and zone of initial dilution" to Section 3.3 Locational Data. A similar change will be reflected in the Department's sampling manual. The Department does not disagree with aggregating samples which are in close temporal or spatial proximity, although a demonstration that aggregation is appropriate must be made as part of the submittal whenever this approach is utilized. However, the Department retains the flexibility to consider individual studies.

Comment 165: The Department proposes to conduct modified assessments based on very small data sets (i.e. less than 10 samples). However, Section 4.1,2 of the Original Draft, states the "modified assessment method will be developed." This indicates that the Department has not yet finalized the method for the Modified Water Quality Assessment ("MWQA"). Absent an understanding of what the Department is considering for the MWQA, the commenter cannot evaluate what would constitute an acceptable minimum number of samples. This is particularly relevant if the modified assessment uses statistical procedures that predict trends. The appropriate number of samples in this case is dependent on the statistical method and the confidence intervals around the predictions. Until the Department completes the development of the MWQA method and submits the method for public comment, it is recommended that any waterbody in this situation be placed in Category 3. (11)

Response to Comment 165: The phrase "will be developed" was a typographical error. Section 4.2.1 in the proposed Methods Document did include a method for assessing small datasets and the Department has removed the phrase "will be developed". The Department recognizes that these smaller datasets will need to be assessed on a case-by-case basis. Therefore, a sentence has also been added to Section 4.2.1 to clarify the Department's intention to provide the basis and rationale for using the modified assessment in the Integrated Assessment Report along with the assessment results. The Department does not intend to use these small datasets for trend analysis.

Comment 166: It is inappropriate to place a waterbody segment in Category 5 when two samples out of a set of 9 or less "grab" samples exceed a water quality standard that is expressed in a duration having a time scale of days. (11)

Response to Comment 166: The Methods Document is consistent with USEPA guidance that grab samples may be used for comparison to chronic criteria (criteria with a duration of days). ("Guidelines for the Preparation of Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates" (EPA-841-B-97-002B, September, 1997).

Comment 167: Fish Advisories are not water quality standards and have not been subject to the public comment and rulemaking procedures required for water quality standards. Accurate impairment determinations can be made using existing water quality standards and numeric criteria designed to protect human health, including from the consumption of fish or shellfish (or for that matter, aquatic life). In addition, the validity and accuracy of the tissue data and the thresholds and guidelines used to issue Fish Advisories can vary. The Department should apply specific human health water quality criteria in making assessment decisions concerning the fish consumption designated use, rather than Fish Advisories. (11)

Response to Comment 167: See Response to Comment 78.

Comment 168: New Jersey Fish Advisories are not based on properly promulgated water quality standards for fish or shellfish consumption; they are issued without adhering to the State administrative procedures necessary to develop water quality standards or other binding provisions. Neither the Federal Food and Drug Administration ("FDA") tolerance levels nor the TIBC guidelines described in the Methodology as the basis for New Jersey Fish Advisories have been adopted into the State's water quality standards. Further, the Methodology notes that FDA tolerance levels are not human health risk-based, but instead reflect cost-benefit analyses. They therefore can have no relationship to achievement of the State's water quality standards or support of the fish consumption designated use. States are required to list only those waters "for which the effluent limitations . . . are not stringent enough to implement any water quality standard applicable to such waters" 33 USC §1313(dxl)(A). Because New Jersey Fish Advisories are not issued pursuant to properly promulgated water quality standards, it is inappropriate to use them to make listing and other decisions that can lead to the imposition of regulatory requirements upon dischargers. (11)

Response to Comment 168: See Response to Comment 78.

Comment 169: If a particular waterbody is meeting New Jersey's human health criteria, but a Fish Advisory has been issued, that advisory is based on more protective parameters than those specified in the State water quality standards. In other words, where the Department has made a determination that a water is meeting human health water quality standards, the methods used by Food and Drug Administration (FDA) or Toxics in Biota Committee (TIBC) in issuing that fish advisory are necessarily more protective than those used to set the water quality standards. In such situations, EPA's recent guidance on the case of Fish Advisories indicates that no impairment should be found. That guidance indicates that it is not appropriate to determine that a waterbody is impaired if the assumptions underlying the advisory are more protective than those

used to develop state water quality standards for the protection of human health. Because the Methodology allows listings based on fish advisories even when water quality criteria are not exceeded, it clearly is more protective than required by the water quality standards. Therefore, the Methodology is inconsistent with EPA guidance on this issue and should be revised. In addition to the technical problems inherent in using fish advisories to make listing decisions with regulatory implications, the Department may eventually face legal challenges. As discussed in the section below on narrative criteria, the Department should not list a water unless it finds that a designated use is not being supported. Such a finding should be made only if objective, legally adopted criteria necessary to support that use are being exceeded. Fish Advisories, as they exist in New Jersey, do not satisfy this requirement, and therefore may be subject to challenge on due process grounds. (11)

Response to Comment 169: Response to Comment 78 addresses this issue.

Comment 170: Although many waters were included on the 1998 Impaired Waterbodies List (the "1998 List") due to the existence of Fish Advisories, the Department determined in the Methodology that because the advisories for PCB, dioxin, and pesticides were based on data collected in the mid-1980s, new data would be required for further evaluation and the affected waters would be placed in Category 3 (insufficient data) rather than Category 5 (impaired and requiring a TMDL). See Methodology at Sections 5.4 and 7.3.2.C. In the Re-Proposed List, however, the Department has moved several waters in the Lower Delaware Region with fish advisories for PCB or chlordane from Category 3 back to Category 5, apparently for the sole reason that the waters were previously included on the 1998 List. This change is inconsistent with the Methodology and contrary to the goal of developing assessments based on sound science. The Department should move all waters with such fish advisories back into Category 3 of the List until additional data can be collected. (11)

Response to Comment 170: In reviewing the draft Integrated List, USEPA Region 2 strongly suggested keeping fish advisories on Sublist 5 until such time as new data is collected. At Region 2's request, the Department moved the fish advisories from Sublist 4 to Sublist 5 until such time as the new data is available and assessed. The Methods Document has been amended to reflect this change.

Comment 171: The Department has included some waters in the List that are impaired based on narrative criteria. Such waters should not be listed unless a properly promulgated translator mechanism has been adopted that objectively demonstrates that the water is quantitatively impaired. A number of courts have concluded that narrative criteria such as those found in the New Jersey Surface Water Quality Standards should not be applied to any water in the absence of a numerical translator because of due process concerns. Narrative criteria cannot serve as the basis for listing if an objective translation method has not been established using appropriate rulemaking procedures. For example, the Los Angeles County Superior Court held that the Califomia Regional Water Quality Control Board's failure to adopt numeric translators for its narrative toxicity standards violated federal regulations. The court stated that the Board was "required to `bridge the analytical gap' between the narrative requirement and its translated numeric equivalent." City of Los Angeles, Bureau of Sanitation v. State Water Resources Control Board, BS 060 957 (Los Angeles County Sup. Ct. April 4, 2001). Based upon this

reasoning, The Department should not classify waters as impaired based solely upon the exceedance of a narrative standard, unless an objective translator has been adopted through the proper rulemaking procedures. (11)

Response to Comment 171: The data the Department reviews to assess narrative criteria (such as fish advisory data and benthic macroinvertebrate assessments) reflect the status of the designated use in question and as such are valid in listing on 303(d) if the use is determined to be impaired based on these data.

Comment 172: In numerous locations throughout the Methodology, the fact that a particular water was included on the 1998 List results in a non-attainment designation if no new data are available. This practice is inappropriate where existing data would not otherwise lead to a non-attainment designation under the current Methodology. (11)

Response to Comment 172: The Methods Document allows the Department to review data for impaired waterbodies and reassess these waterbodies in accordance with current the methods outlined in the Methods Document. For example, most chemical parameters require two violations to be assessed as non-attaining. If a waterbody was listed in 1998 with 10 data points and only one violation, it would be assessed in 2002 as attaining and placed in Sublist 1 for that pollutant.

Comment 173: Section 4.2. Organics Assessment. The use of a probabilistic design as presented in Section 4.1.3 "is inappropriate and that for waterbodies where there is an insufficient number of samples available for performing the assessment should be placed in Category 3". The description of the "Assessment Method for Probabilistic Design" is unclear. If it is to be retained, the Department should clarify its intent, justify its applicability and present the methodologies that would be included in the analyses. Since the Department has not provided any further clarification regarding this assessment method, the Department still has not provided adequate notice on how it plans to proceed to conduct organics assessment. (11)

Response to Comment 173: USEPA recommends that states include the use of probabilistic monitoring and assessment methods to increase the number and percentage of waterbodies assessed in making assessments for 305(b). While probabilistic statistical assessments can provide reasonable estimates of water quality on a statewide basis, the Department believes that application of the results to non-monitored stream reaches is not appropriate for 303(d). The Department does believe, however, that it is appropriate for 305(b) reporting.

In Section 4.1.3 of the Methods Document, the Department has outlined, for information and discussion, several approaches to be explored which could better utilize the probabilistic monitoring data. The Department has not decided on the best approach at this time and will include the methodology for assessing the data from the probabilistic monitoring program when developed. In generating the 2002 Integrated List, the Department has not used probabilistic statistical assessment methods for assessing or listing waterbodies. Listings were done solely on monitored waters only using data taken from probabilistic networks but not using probabilistic projections.

In reference to data on organic toxic substances, these were collected only at Status Stations (once a year for) and data was insufficient to meet the minimum requirements for the toxics methodology. If exceedances occur, more frequent monitoring will be recommended unless there are at least 4 data values.

Comment 174: Section 4.2, Table 4.3 The Department needs to define the statistical procedures that will be used to determine the existence or absence of "water quality trends," as referenced under the column "Assessment Method" in this Table. (11)

Response to Comment 174: The Department contracted with the US Geological Survey to evaluate water quality trends in New Jersey. The trends are determined using the nonparametric Seasonal Kendals test. The results were peer reviewed and subsequently published as "Trends in Water Quality of New Jersey Streams, Water Years 1986-95." Water Resources Investigations Report 98-4204.

Comment 175: Section 4.2.2. For consistency this section should be entitled "Metals Assessment". (11)

Response to Comment 175: The Department agrees and has made the change.

Comment 176: The Department should provide for review and comment the referenced "metals procedure." At a minimum, the Department should identity the precise "metals procedure" referenced in these documents so that the public can review this procedure and have an opportunity to both understand its scientific bases and to evaluate any Department or third party assessments. (11)

Response to Comment 176: The data requirements in Table 4.4 and the assessment methodology identified in Table 4.5 of the Methods Document summarize the assessment procedure developed by the USEPA-USGS-NJDEP workgroup. For additional clarification, the details of this procedure have been included in the final Integrated Assessment and Methodology Report as Appendix V. The metals assessment results which utilize this procedure are discussed in the 2002 Integrated Monitoring and Assessment Report.

Comment 177: Section 4.2.2, Table 4.4.4 The "flow consideration" for collecting samples are related to baseflow conditions. While it is possible to establish "baseflow conditions" for non-tidal streams, it may be difficult or impossible to determine "baseflow conditions" for tidal streams and estuaries (such as the Arthur Kill, the Delaware Estuary and Newark Bay). The Department needs to clarify this interpretation and define the methodologies that would be employed for waterbodies where the flow is dominated by tidal action. (11)

Response to Comment 177: The Department intends to use this assessment method only with data from non-tidal waterbodies and has added "non-tidal waters" throughout section 4.2.2 for clarification.

Comment 178: Section 8.0 Method to Rank and Prioritize Impaired Waterbodies.

It is not clear from the first paragraph whether the Department is prioritizing pollutants or impaired waterbodies, as stated in the opening sentence. The Department should revise the third and fourth sentences to read: “The Department will prioritize those waterbodies identified in Category 5 dependant on the nature of the pollutant of concern, as listed in Table 8.1. Waterbodies impaired by pollutants that relate directly to human health issues rank `high', while more conventional water quality parameters rank `medium' and aquatic life considerations rank `low'.” The title of Table 8.1 should read, as follows: “Criteria for Ranking Waterbodies by Pollutants of Concern.” (11)

Response to Comment 178: The Department prioritized the waterbodies in Sublist 5 based upon the pollutant of concern. Most of the individual waterbody segments have more than one priority ranking, based on the parameters not attaining applicable surface water quality standards. For example, Big Brook at Maywood Drive in Marlboro has a medium priority for phosphorus, but a high priority for fecal coliform. This split prioritization provides the Department with an approach to address impairments directly related to human health issues, i.e. fecal coliform prior to more conventional water quality parameters, i.e. total phosphorous. The Department has amended the title to Table 8.1 as suggested.

Comment 179: Section 8.0. In Table 8.1, the Department ranks and prioritizes impaired waterbodies. However, the Re-Proposed Documents do not provide the Department's bases for these determinations. Moreover, the Department's rationale for these determinations is not obvious. For example, in Table 8-1 all metals are categorized as a "high" priority. This is neither logical nor scientific since as noted in an earlier section of the Re-Proposed Documents entitled "Aluminum, Beryllium and Iron," the toxicity of individual metals varies considerably. (11)

Response to Comment 179: See Response to Comment 104 and Response to Comments 105 through 106.

Comment 180: Section 8.0 Table 8.1. The Department does not provide any bases for the inclusion of temperature as a pollutant of "medium" concern on Table 8-1. The regulation of thermal discharges is subject to case-by-case determinations pursuant to §316(a) of the Federal Clean Water Act, 33 USC §1326(a) and that §303(g) specifically provides that: "Water quality standards relating to heat shall be consistent with the requirements of [§316(a)] of the [Clean Water Act]." Many discharges of heat have prepared demonstrations pursuant to §316(a) that have demonstrated to the satisfaction of the Department and EPA that less stringent effluent limitations are protective of the aquatic ecosystem present in the area. (11)

Response to Comment 180: Temperature criteria are established to protect aquatic life uses. Since temperature does not directly related to human health, the Department determined that a priority of “medium” is appropriate. TMDLs are developed to attain applicable surface water quality standards, while effluent limitations are established pursuant to the regulations governing the National Pollutant Discharge Elimination System (NPDES). The NPDES program is not part of this 2002 Integrated Report and beyond the scope of this action.

Comment 181: Section 1: Chemical/Physical Parameters Listing and Delisting Status, Fish Tissue Data. The Department should provide further information regarding the multi-media

dynamic model referenced in Footnote 1 and its impact on the development of a TMDL for mercury in the New York/New Jersey Harbor. (11)

Response to Comment 181: The multi-media dynamic model referenced in Footnote 1 is under development as part of the Contamination Assessment and Reduction Project (CARP), a component of the New York/New Jersey Harbor Estuary Program. CARP studies the fate and transport of contaminants discharge to the New Your-New Jersey estuary. The Project assess current and historical sediment data within the estuary to facilitate management of contaminated sediments.. The overall assessment includes identifying contaminants of concern (including mercury), identifying sources and assessing suitable disposal options for dredged material. Additional information on CARP and the model can be found on their website at http://www.harborestuary.org/carp.htm

Comment 182: Section 1: Chemical/Physical Parameters Listing and Delisting Status, Shellfish. It is inappropriate for the Department to list waterbodies as "impaired" due to shellfish prohibition and/or closure. If the Department decides to continue this practice, the Department must denote the pollutant of concern and the data source used to make this determination. In this section of the Comparison Document, the Department states that where there is sufficient water quality data, attainment is assessed. In these instances, the Department should base the assessment on the data rather than on the prohibition and/or closure. (11)

Response to Comment 182: The Department agrees with the comment on administrative closings and refers the commenter to Section 5.5 which states "Administrative closures are established in areas around potential pollution sources, such as sewage outfalls and marinas. These areas are closed as a preventive measure to protect shellfish from contamination in areas immediately adjacent to the 15 sewage outfalls in the ocean and from an emergency such as a sewage bypass or break in an outfall pipe. In marinas, prohibited areas are established to protect human health from contamination from boat wastes and runoff. Where closings are based on land use (i.e. marinas, STP outfalls etc.) and there is insufficient water quality data to assess attainment, these areas are identified as not assessed. Where closings are based on land use but there is sufficient data to assess attainment, these areas will be assessed. This assessment methodology is consistent with USEPA's guidance on the use of shellfish classifications in 303(d) decisions which states that waters classified "Prohibited" due to administrative closures should not be classified as impaired if data are not available to document an impairment. (USEPA, 2000).

For non-administrative closures, total coliform data serves as the basis for closure status. Section 5.5 of the Methods Document referred to Appendix II for details of the monitoring source for shellfish assessments. Table A1 identifies the Department's National Shellfish Sanitation Program as the source of the data and the pollutant as total coliform.

Comment 183: Section 2: AMNET Listing and Delisting Status. It is inappropriate for the Department to use biological assessment to list waterbodies as impaired. (11)

Response to Comment 183: See Response to Comment 51.

Comment 184: Section 2: AMNET Listing and Delisting Status, subsection III. The presentation in this section is confusing and needs substantial reorganization so that it clearly explains the

process and criteria for delisting and listing moderately impaired sites including the role unique sites and seasonality would play in making any determination. (11)

Response to Comment 184: The purpose of the Comparison document is to guide the reader in comparing New Jersey's 1998 303(d) list with that promulgated in 2002 and as such is not designed to provide detailed justification for the protocols developed in listing AMNET sites in Sublist 3. The text of the introduction of Section 2 has been edited to refer the reader to the appropriate sections of the Methods Document in order to obtain the details regarding the development of the protocols identifying "unique sites."

Comment 185: Section 2: AMNET Listing and Delisting Status. The "Note" following subsection "Discontinued AMNET Sites" is not linked to any specific discussion in Section 2. It is not clear whether the Department intended to delete this note in the Re-proposal or simply failed to include a reference to the Note in the body of the Re-proposal or on a Table. The commenter believes that the Note re-enforces its position that biological monitoring should be used only to identify potential impairments, many of which could be caused by non-pollutant impacts such as low flow, land use and erosion rather than a pollutant. (11)

Response to Comment 185: The "note" was to remind readers that many AMNET sites previously listed in 1998 were delisted in 2002 simply because their current status was found to be unimpaired and hence, in full support of the designated use. These locations appear in Sublist 1 of the 2002 Integrated List. The section has been edited to clarify this point.

Comment 186: Section 4.2, Table 4.X. This table should be numbered as Table 4.3, to be consistent with the sequencing established in the previous subsections of Section 4. The tables currently numbered 4.3, 4.4 and 4.5 should be renumbered 4.4, 4.5 and 4.6 respectively. (11)

Response to Comment 186: The Department agrees and has made the changes.

Comment 187: Under the data requirements for "Minimum Sampling Frequency" the initial sentence should read "Data collected quarterly, over a 2 year period".(11)

Response to Comment 187: The Department agrees and has made the changes.

Comment 188: Section 4.2. In this sub-section, the Sub-headings `Un-ionized Ammonia Assessment' and ' Organics Assessment' need to be identified as 4.2.1 and 4.2.2, respectively. (11)

Response to Comment 188: The Department does not agree with the need to add numbers to the subheadings here.

Comment 189: Section 4.2.2. The Department makes a reference, "see notes", but fails to provide those notes. (11)

Response to Comment 189: The Department intended that the reference "see notes" to refer to the definition of base and elevated flows. The definitions have been added to the table.

Comment 190: Summary of Delisting Rational, Item 2.B. The referenced Section 4.2.4 currently does not exist as a result of the revision to Section 4.2. The correct citation should be 4.2.3. (11)

Response to Comment 190: The Department has corrected the reference in item 2B to Section 4.2.2 which is the current section number for the metals methodology.

Comment 191: Section 1: Chemical/Physical Parameters Listing and Delisting Status, Table 1.1. The Department should review the current formatting of this table. There are numerous locations where two columns are merged into a single column. The contents of the column cannot be definitively associated with the proper column heading. (11)

Response to Comment 191: Table 1.1 has been reformatted.

Comment 192: Section 2: AMNET Listing and Delisting Status, Table 2.1. The columns identified as "Pollutant/Impact: Biological" and "Data Source" are not shown in the table and the table does not have a title indicating that it is Table 2.1. (11)

Response to Comment 192: Columns entitled "Pollutant/Impact: Biological" and "Data Source" are in the 1998 303(d) List. The text of Section 2 has been edited to clarify this. The Title "Table 2.1" was unintentionally lost when the original files were converted to pdf format and has been included in the final version.

Comment 193: The Department released the Methodology and the List simultaneously. Thus, interested parties that raised issues with the proposed Methodology did not have the opportunity to have the Department respond to their comments prior to its use, by the Department, in assessing the waterbodies of New Jersey. Therefore, interested parties did not have the opportunity to fully evaluate whether the Department applied the methods appropriately in preparing the §303(d) list or whether the waterbodies were placed in the correct Category. (11)

Response to Comment 193: The Department had anticipated releasing the Methods Document prior to the release of the Integrated List. However, USEPA did not release its guidance for the development of an Integrated List until November 2001. This left the Department with little time to complete the development of its Methods Document and Integrated List and meet the regulatory submittal deadlines. Based on the first round of comments, the Department made changes to Sublist 5 (303(d) list) and minor changes to two sections of the methodology. The Department then reproposed the amended List and two sections for an additional 30 day comment period. Therefore, interested parties had an additional opportunity to evaluate Sublist 5 (303(d) list) with the methodology which incorporated changes recommended by the commenters. The Department believes that a sufficient time has been provided for evaluation and comment.

Comment 194: Certain portions of the Re-Proposed Documents should be revised to address the data quality, fish consumption, narrative, and prior listing issues discussed in these comments before they are submitted to EPA for approval. In addition, the Department should address any

issues included in its July 8 comments that were not resolved in the Re-Proposed Documents. Only then can a true review of the 2002 Listing be conducted. (11)

Response to Comment 194: The Department has prepared this Response to Comment Document addressing all comments raised as a result of the May 20, 2002 and the August 5, 2002 public notices. The Methods Document and Integrated List have been revised to reflect any changes or clarifications resulting from those comments.

Comment 195: The data, measurement methods, analyses, and any other information that were considered in the water quality assessment for each waterbody (or waterbody segment) should be fully documented and readily available to the, public, industry, and other interested parties. This documentation should include the bases for any changes made to the Category assigned to waterbody. All of the documentation should be maintained in a central repository. Constructing this repository presumably should not require excessive resources since the Department has completed its assessment of all waterbodies and prepared its findings in the draft of the §303(d) listing of impaired waterbodies for 2002.(11)

Response to Comment 195: See Response to Comment 14.

Comment 196: Tracking all 1998 Waters: It is important for EPA to be able to identify all the waters previously listed and their status on the 2002 list. It appears that the naming scheme for certain waters has been changed from the 1998 list and a crosswalk explaining the name changes is needed for those 1998-listed waters represented by different names on the 2002 list. (19)

Response to Comment 196: See Response to Comment 139. The Department has revised the Comparison Document (a supplement to the Integrated List Package) to better identify 1998 303(d) listed waterbodies represented by different names on the 2002 List.

Comment 197: Waterbody/Pollutant Combinations Not Found on Lists: The commenter could not find the following on List 5: the Delaware Estuary for PCBs and beryllium, the Passaic River at Great Piece for mercury in fish tissue (perhaps this is a naming scheme issue?), the Raritan River mainstem at Raritan for pH, Fecal Coliform, Total Phosphorus, Greenwood Lake for sedimentation, Total Phosphorus and DO and Newark Bay for PAHs, dieldrin, chlordane, and DDT. The Kill van Kull and the NYC and Battery listing for Fecal Coliform was to move to List 3 yet they are not there. Also, the Hackensack River at Rivervale is found on Lists 1 & 2, 3, 4 and 5 (and the errata sheet for nickel) although the methodology states that a water will be listed on just one list. (19)

Response to Comment 197: Based on the recently received draft 305(b) Report from DRBC, the Delaware Estuary has been placed on Sublist 5 for PCB. Since there is no SWQS for beryllium, this parameter is unassessed. The Passaic River at Great Piece for mercury in fish tissue has been added to Sublist 5. The Raritan River mainstem at Raritan for pH, Fecal Coliform, Total Phosphorus has been replaced by Raritan River at Manville. The Kill Van Kull and NYC and Battery for Fecal Coliform were not shown on Sublist 3 because they were listed on Sublist 5. However, since the 2002 Integrated List was revised to reflect individual waterbody/parameter listings, these waterbodies/pollutants are now shown on Sublist 3.

Likewise, the Hackensack will appear on several categories, each listing specific to a parameter. Greenwood Lake was added to Sublist 5 for nutrients, sedimentation, total phosphorus and DO violations.

Comment 198: Justification for Delisting Waters: In most cases, additional site-specific information would be required for delisting. For instance, the comparison document states that the NYC and Battery is being delisted for Fecal Coliform for reason 2D Other insufficient data. Rational (sic) will be identified on a case by case basis." The commenter could not find the additional case-specific data in the document for this change. If new data are being used for delisting, then the commenter would like to know what the new data are. For cases where rationale 4B is used, the commenter needs to know:

1. A description of the various requirements and the authorities that require them;
2. An estimate of the reductions that will occur;
3. A schedule of when the required measures will be implemented;
4. An estimate of when the water quality standards will be attained; and
5. A plan to monitor the time of attainment of the water quality standards.(19)

Response to Comment 198: The Department has modified the comparison document to more clearly state the reason for delisting. The Department proposed listing several waterbodies in Sublist 4B. However, the Department does not have the information necessary to support listing consistent with USEPA guidance. Therefore, based on USEPA Region 2's request, those waterbodies previously listed in Sublist 4B, have been listed in Sublist 5.

Comment 199: Priority Ranking: The ranked List 5 list contains 806 waterbed/pollutant combinations and the non-ranked 2002 Integrated List 5 contains 1,406 combinations. NJDEP needs to identify the 600 waters which were not ranked and provide a priority ranking for each. (19)

Response to Comment 199: The priority ranking assigned to the waterbodies/pollutants on Sublist 5 was inadvertently cut off when the document was converted to pdf format for posting on the web-page. This was subsequently corrected and the entire list was made available. Sublist 5 includes 904 impaired waterbodies. The ranked Sublist 5 incorporates the same 904 waterbodies. Some of the waterbodies listed may include one or more pollutants.

Comment 200: The commenter is aware that the Department is developing 159 TMDLs by July 31, 2003 per the NJDEP/EPA Memorandum of Agreement for Scheduling TMDL Development. The commenter assumes that any other near-term TMDLs identified in this 2002 CWA 303(d) list will be in addition to those identified in the MOA. (19)

Response to Comment 200: The Department agrees that the TMDLs identified in the 2002 Schedule are in addition to those identified in the MOA.

Comment 201: Please note that the priority ranking should provide a particular waterbody/pollutant combination s priority for development of a TMDL per the Federal TMDL regulations. (19)

Response to Comment 201: The priority ranking does apply to a specific waterbody/pollutant combination. If more than one pollutant is identified for a waterbody and the priority is not the same for all pollutants, the table identifies the ranking for the individual pollutants (i.e. Fecal coliform is low, TP and metals are high). See, for example, North Branch Metedeconk At Jackson Mills Rd In Freehold which is listed for fecal coliform and phosphorus. The North Branch Metedeconk has medium priority for phosphorus and a high priority for fecal coliform.

Comment 202: Specific Identification of Pollutants: The List does not identify the pollutants causing impairments in waterbodies as required by 40 CFR 130.7(b)(4). Waters listed based on shellfish designated use impairments should be listed for pathogens. Waters listed based on macroinvertebrate monitoring data should say that there is an aquatic life impairment with the pollutant to be identified. Listings for eutrophic lakes should include nutrients as the pollutant of concern. (19)

Response to Comment 202: The Department agrees and has amended the tables to further clarify this.

Comment 203: Fish Consumption Advisories: Waters with fish consumption advisories should be listed on List 5. There is a discrepancy between the Methodology (page 47) and the Comparison Document delisting rationale 2C (page 2). (19)

Response to Comment 203: In regard to the comment concerning fish consumption advisories, response to Comment 78. In regard to the comment concerning a discrepancy between the Methods Document and the Comparison Document, the Methods Document on page 47 discusses reasons for placing waterbodies with fish tissue advisories on Sublist 3 and 4B thereby delisting these waters. These are not mentioned in the corresponding section of the Comparison Document because these waterbodies are all now on Sublist 5 meaning they are no longer delisted. The revised Methods Document reflects this change rendering the delisting criteria in the new Methods Document identical to the Comparison Document. More consistent wording has also been added to the Methods Document regarding "Metals Methodology" in delisting, rendering this portion more consistent as well.

Comment 204: Lakes Listed for Atmospheric Mercury Contamination: It is the commenter's understanding that the Department will address the issue of mercury contamination of lakes. Mercury impairment is a national issue and the national consensus is to place these impaired waters on Category 5 with a low priority for TMDL development. At this time, a state is unable to place these waters in Category 4B since it requires data to show that enforceable measures will lead to water quality standards attainment. (19)

Response to Comment 204: The Department proposed listing Lakes Listed for Atmospheric Mercury Contamination on Sublist 4B. The Department believed that these waters should be placed in Sublist 4 to encourage implementation of best management practices to reduce the levels of mercury while waiting for a national TMDL for mercury. The Department has placed these waters on Sublist 5 with a low priority for TMDL development as recommended by USEPA.

Comment 205: Remanded waters: Waters that were listed by EPA in connection to the TMDL lawsuit are listed under Sublist 4B, based on the assumption that "other control strategies" will result in meeting water quality standards. In order to provide justification for listing waters under 4B, the information identified in Comment 198 above is required. (19)

Response to Comment 205: See Response to Comment 198.

Comment 206: All Existing and Readily Available Data: Any existing and readily available data not used by the Department in making its listing decisions will need to be evaluated by EPA and this will include non-electronically formatted data. (19)

Response to Comment 206: Data received by the Department was provided in an electronic format. The Integrated Report will identify all data received by the Department and provide a rationale for any data not used in the 2002 Integrated List.

Comment 207: The Integrated Listing Methodology Table on page 45 of the Methods document makes reference to numerical criteria and should also include designated uses. (19)

Response to Comment 207: The Department agrees and has made the change to Table 7.1.